

PUZZLEWISE™

School/Home Edition

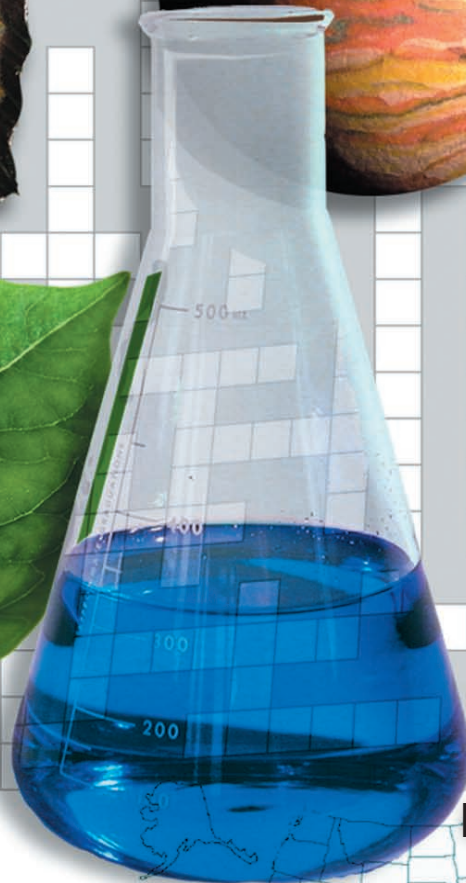
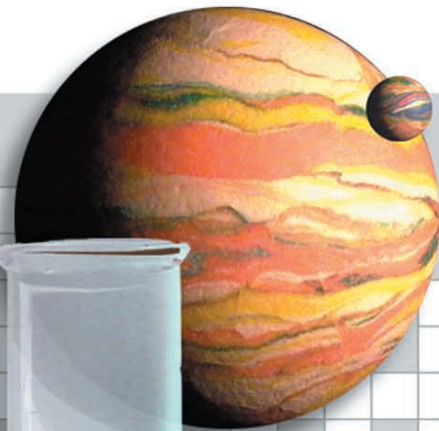
SCIENCE

Standards Based Science Literacy Program

The Building Block to Test Preparation, Science Inquiry,
and Classroom Instruction.

Supports
NSEA and **state**
standards.

Level 4
2009 Edition



- 18 Lessons
- 9 Assessments
- 8 Teaching Activities
- 7 Bonus Crosswords
- Teacher Guide, P. 8-9

PWS-1004

Interdisciplinary activities integrating science, reading, and writing!

Student Name:

New Books From PuzzleWise™

Supplemental programs for regular, gifted, remedial, and ELL students
Grades 1 - 12

Testimonial:

"I am convinced these books have a positive impact on my students' reasoning, problem-solving abilities, and knowledge. I know these books are helping me prepare my students for their future."

- Jane Robertson, Arizona Teacher of the Year, 2004.

Innovative Ways to Use Our Books:

We have several options to help you incorporate our books into your teaching program, in the best way suited to helping your students. Consider in class, or ... home work, after school programs, substitute teacher plans, summer activity programs, extra credit, bell time, puzzle time, and puzzle clubs.

For any students needing some level of remediation, or advanced students needing support, we provide word lists (answer banks) on our Web site. You can choose when to offer these word lists, depending on the challenges of your students.

You can also use our books to keep skills fresh in a **summer academic program**. Or, if you have sufficient puzzles left at year's end, have students complete them during the summer as part of your summer transition program.



Visit
www.PuzzleWise.com

Download and try free sample lessons from our other books.
You can also order online.

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Founders: Dr. Daniel Levine and Matt W. Beck, M. Ed.

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PuzzleWise™

P.O. Box 28312, Bellingham, WA 98228 U.S.A.

Phone: 1-360-650-0671 Fax: 1-866-683-3219

www.puzzlewise.com daniellevine@puzzlewise.com

Special Thanks

We wish to thank the following educators for their counsel in helping us prepare this science series.

Your support, responsiveness, and wise guidance is greatly appreciated!

■ Dr. Terry Pickeral

Executive Director, National Center for Learning and Citizenship, Education Commission of the States

■ Dr. Jeffrey Piontek

Educational Specialist, Science, Instructional Services Branch, Office of Curriculum, Instruction, and Student Support, Hawaii Department of Education; Science Educational Consultant for Texas Education Agency (Department of Education), and the New York City Department of Education

■ Dr. Richard Vineyard

Assistant Director and Science Consultant: Assessments, Program Accountability, and Curriculum, Nevada Department of Education; Past President of the Council of State Science Supervisors

■ Science Assessment Leadership Team

OSPI Science Learning Team, Co-Leaders: Eric Wuersten and Roy Beven (Washington)

■ SALT Writers and Editors

Meredith Clayton, Cathy Darley, Jen Fox, Rosemary Leifer, Marcie Mueller, Katie Owens, Nancy Ridenour, Peter Sherwin

■ Tony Abernathy

Science, Math, Technology Educational Consultant. Formerly a consultant with The Princeton Review

■ Veronique Paquette

2003 Teacher of the Year (Washington)

■ Betty “Lindy” Hopkins

2005 Teacher of the Year (Mississippi)

■ Pam Pottle

Bellingham School District Learning Facilitator (WA); Vice President North Sound Reading Council



Authors



Georgi Delgadillo
East Valley
School District
Spokane, WA

GEORGI DELGADILLO

is a member of the Science Assessment Leadership Team, writing and evaluating Washington State science testing materials. Georgi is also a member of NASA's Solar System Educator team providing NASA staff development. She is a regional representative of the Washington

Science Teacher Association and has presented at numerous conferences. Georgi is married to Carlos and has two daughters, Lauren and Brigitte.



Stewart "Andy"
Anderson
Othello School District
Othello, WA

STEWART "ANDY"

ANDERSON is an assistant principal with the Othello School District in Othello, WA. Andy's previous position was Science Coordinator for the Eastmont School District in East Wenatchee, WA. As a member of the Washington State Science Assessment Leadership

Team, Andy writes and evaluates science materials used to assess students for the statewide test (WASL). Andy has presented at numerous conferences, consults for various school districts, and also teaches college science and math courses.

This is a strong science literacy program, an essential piece that's missing in most classrooms, limiting science education. For a few pennies a day, you'll see significant improvements in your science inquiry-based programs and state test results.



Brian Teppner
Science TOSA,
Renton, WA

BRIAN TEPPNER, a National Board Certified Teacher, is a science teacher on special assignment in the Renton School District, WA. Brian has received awards for innovations in teaching and for volunteer efforts in the community. Brian is a member of NSTA, WSTA, the Science Assessment Leadership Team, and has presented to districts,

and at regional and national science conventions. Brian is a husband to Mary, and a father to Madelyn, Isabel and Emma.



Mary Bennett Moore
Lewis and Clark
Elementary School
Richland, WA

MARY BENNETT MOORE, a National Board Certified teacher, teaches GATE. Mary received the 2005 Amgen Award for Science Teaching Excellence, and the 2001 Presidential Award for Excellence in Mathematics and Science Teaching. She is a board member of the Washington Science Teachers Association, and co-chairs

the state WSTA Science and Engineering Contest. Mary is also a member of the Washington Science Assessment Leadership Team, the Science Curriculum Instructional Frameworks team, and serves as a teacher trainer for Washington State Leadership and Assistance for Science Education Reform (LASER).

Keys to Successfully Doing the Lessons



The 18 Lessons

The Science Articles:

- The articles have a readability code in the upper right corner. “R: 2.3” means the article scored at a 2.3 grade reading level, without the bolded vocabulary words.

- The bolded words are key science vocabulary words, which build science literacy. These words may be used as answers in the crossword puzzles. Bolded words are either defined in the article, or in the glossary.

The Crossword Puzzles:

The crosswords have four types of clues:

1. Clues based on the lesson’s science article.
2. Clues based on other science articles. These will always have a page reference in the clue.

3. Clues based on a glossary word. These will also have a page reference in the clue.
4. Clues that require students to use the key words in the clue to find the solution in the glossary. These clues have no page references, but have a star ★ identifying them as this type of clue.

The Application/Activity Pages:

Multiple Choice Questions:

Based on the article, these questions simulate state test-like questions. After students select their choice, we recommend teachers lead a discussion (academic discourse) on why students chose their solution.

Extended Response Questions:

Based on the article, these questions also simulate state test-like questions. These questions are also excellent for academic discourse.

Suggested Experiments:

At the bottom of each application page is a suggested mini-experiment or activity, which can be expanded into a larger investigation depending on the teacher and students’ interest.

Teachers lead the academic discourse, and students answer the questions on the application pages. These lessons also provide structure for hands-on science activities that may be conducted in class. Teachers are invited to use the scoring rubrics found on P. 104.

The 9 Assessment / Lessons

- There are 9 assessment lessons. Assessments 1, 2, 4, 5, 7, 8 contain a crossword and an application page. Assessments 3, 6, and 9 contain a non-fiction article and an application page.
- The crosswords contain clues from all the preceding articles and crosswords.
- The application pages have questions based on prior material.

- The assessment crossword clues without page numbers are from any preceding article.
- The only clues with page references are for clues students have already had, which are based on articles that come later in the book; and clues based on glossary words. Also, as before, clues requiring students to use the key words in the clue to find the solution in the glossary have a star ★ identifying them as this type of clue.

The 8 Teaching Activities

Reading for Content:

There are four lessons: Dwarf Hamsters (P. 20 – 1), What is a Biome? (P. 30 – 1), Who Was Isaac Newton? (P. 62 – 3), and What is a Cloud? (P. 84 – 5). Students integrate reading literacy in the science content area with non-fiction passages, and answer the questions, which are based on national reading standards. There is no crossword.

Teaching Activities:

There are four lessons, intended as a whole class activity with teacher direction: A Scientific Investigation (P. 40 – 43), Summaries and Conclusions (P. 52 – 3), The Scientific Design Process (P. 72 – 75), and Comparing Data (P. 94– 95). There is no crossword. These activities are important because they prepare students for the application pages that follow.

Guide for Teachers and Parents

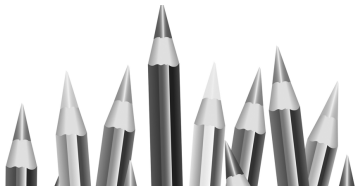
“Whether you believe you can do a thing or not, you are right.”

Henry Ford, Automobile Industry Leader

Our Vision: Every child is a knowledgeable, independent, self-motivated life-long learner.

Step 1: PRE-TEACHING ACTIVITIES:

- Read this “Guide For Teachers and Parents”, and “Keys to Successfully Doing the Lessons” on page 7.
- Make a copy of Lesson 1 and do it yourself to get a feel for the activities.
- Review the book in its entirety so you know how it’s laid out.
- Consider cutting out the last page in the back so the assessment keys are restricted.
- Remember that word banks are on-line (puzzlewise.com) to help students needing support.
- Watch the Professional Development CD available for this program.



Step 2: SESSIONS 1 – 3: WHOLE CLASS.

Hand out books, collect at end of class.

- Introduce books so students know how their book is organized.
- Read first article together, as a class.

GOALS:

1. Students learn research skills.
2. Students develop critical-thinking skills and problem-solving strategies.
3. Students are introduced to science content grade level expectations.

- Put the Lesson 1 crossword puzzle on an overhead display and discuss how to work a crossword puzzle. Pencils stay down.
- Show students how to find answers from the readings and glossary.

- Demonstrate the strategies in the next column.
- Review the activity page and discuss how to answer multiple choice and open-ended test-like questions.

STEP 3. SESSIONS 4 – 6: SMALL GROUPS.

Hand out books.

- Students now keep their own book.
- Students work collaboratively in groups of 2 or 3.
- Students do the Lesson 1 crossword puzzle and activity page.
- The teacher monitors group work and assesses the need for more modeling.
- Students are to “think aloud” and share their strategies and solutions.
- Encourage academic discourse!

GOALS:

1. Students effectively communicate their understanding of science.
2. Students share strategies with their peers.
3. Students work toward independence by reasoning logically and making connections.

Puzzle Solving Strategies for Students:

1. Read clues and answer the easiest. (You don’t have to solve clues in order!)
2. Cross out clues you’ve solved to keep track of which are left.
3. Partial words provide hints. (Ex: 6 letter word for “A gas we breathe.” “o _ _ g _ _ ”)
4. Look up key words in the glossary or other resources like the internet, dictionary, or science resource books. (Ex: “Plants get their energy from here.”, so look up “plants” or “energy”.)
5. If a clue references another page in the book, go to that page and find the answer!

STEP 4. REMAINDER OF THE YEAR: CLASSWORK.

Assign a lesson every two weeks.

- Students work collaboratively in groups of 2 or 3, or individually.
- The teacher monitors group work and assesses the need for more modeling.
- Students are to “think aloud” and share their strategies and solutions.
- Encourage academic discourse!
- Find “Great Teaching Moments” so the whole class benefits.
- Students may work with a puzzle partner at home. (P. 10)
- Students complete two lessons per month.
- The 8 Teaching Activities are whole-class instruction.
- Students do an assessment lesson every month.

GOALS:

1. Students practice and develop their scholastic independence.
2. Students build their knowledge base by steadily visiting/revisiting concepts.
3. Instruction is enhanced through the spiraling of the state and national standards.
4. Students practice science content and process strands, and develop test-taking skills.
5. If working at home, students enlist the support of a science helper (Puzzle Partner).



STEP 5: WORKING THE SCIENCE PUZZLES INTO YOUR CLASS SCHEDULE.

- It is critical to note that this is a supplemental program, and it is intended to accelerate student achievement, build science concepts and science vocabulary essential for success on the state tests, and provide regular practice with state test-like questions.
- Work the lessons into your daily science period.
- Have daily puzzle time, just as many classrooms have daily silent reading time.
- Have students work on their lessons at the beginning of class, as a transition to academics.
- Place students into puzzle teams so they can collaborate and communicate.
- As students complete other work, make puzzles a “choice” activity.
- These puzzles could be great for substitute teacher lesson plans.



PUZZLEWISE™

A simple step-by-step year-round program to augment your current lessons so public, private, and home school students develop into knowledgeable, independent self-motivated life-long learners.

GOALS

- Accelerate student instruction
- Greatly increase students' state mandated science test scores
- Increase parental involvement
- Double school-home communication
- Increase enjoyable grade-level science activities outside of school

PUZZLE PARTNER CONTACT

Please write the name of your Puzzle Partners and their relationships to you here:

Name: 1. _____ 2. _____
Relationship: 1. _____ 2. _____

PARENT CONTRACT

Dear Parents and Guardians,

This school year we request that you support your child's learning by ensuring your child completes at least two lessons in this book each month.

Every _____ your child should bring his/her puzzle book to school so the teacher can review the completed work and check progress. Please check the statements below that work for your family, and sign this contract showing your support for this program.

- I have read the Helpful Hints for parents on page 11, and will follow those that make sense for our family.
- I will make sure my child takes his/her puzzle book to school on the scheduled days.
- I will monitor my child's progress on a regular basis, encouraging him/her to keep up with the weekly schedule.
- I understand that my child does not have to finish the puzzle homework assignments. It's more important that my child tries hard, because success is often achieved with steady steps over time.
- I will notify my child's teacher if my child experiences repetitive frustration.
- I will help my child see that working on these crossword puzzles and lessons is fun and purposeful.
- I will help my child find a safe place in our home where this book can be kept. I will notify the teacher if my child loses or misplaces this PuzzleWise™ book.

I agree to the statements I have checked above.

Parent/Guardian Signature

Date

Helpful Hints For Parents and Guardians

Recommendations:

If you are home schooling, or want your child to have additional science literacy, read the Guide on pages 8 - 9. Follow the guidelines where it makes sense to do so.

1. Communicate with your child about the strategies and problem solving involved in completing the crosswords.
2. Partner with other parents, their children, or a senior who enjoys crosswords so they can work the crosswords together.
3. Carry the puzzle book in the car so it's available during car rides, waiting room visits, and other "I'm bored" times.
4. Alternate completing answers. Your child may answer the "across" clues as you answer the "down" clues. Take turns completing answers.
5. Use the crossword puzzles as a form of assessment to help you plan the science instruction for the day. For example, if your child struggles with the clue, "Plants can make their own ____," then focus your daily lesson on that article, and related information.
6. It's very important that you understand your child is being exposed to unfamiliar material, and it's all right if your child doesn't finish all the clues in the puzzle.
7. As long as your child makes a good attempt to finish the assignment every week, that's sufficient. As the year advances, and more skills are learned and matured, more of each puzzle will be completed. It's more important that your child tries hard, because success is achieved with steady steps over time.
8. Remember, if you want your child to embrace learning as a leisure time activity, you need to model doing crossword puzzles during your "off time", too! When you show yourself as a life long learner who enjoys puzzles, your child is likely to do the same.
9. Make sure there's laughter in your puzzle time, so crosswords are not "a chore". Do all you can to make the puzzles enjoyable and worthwhile for your child.

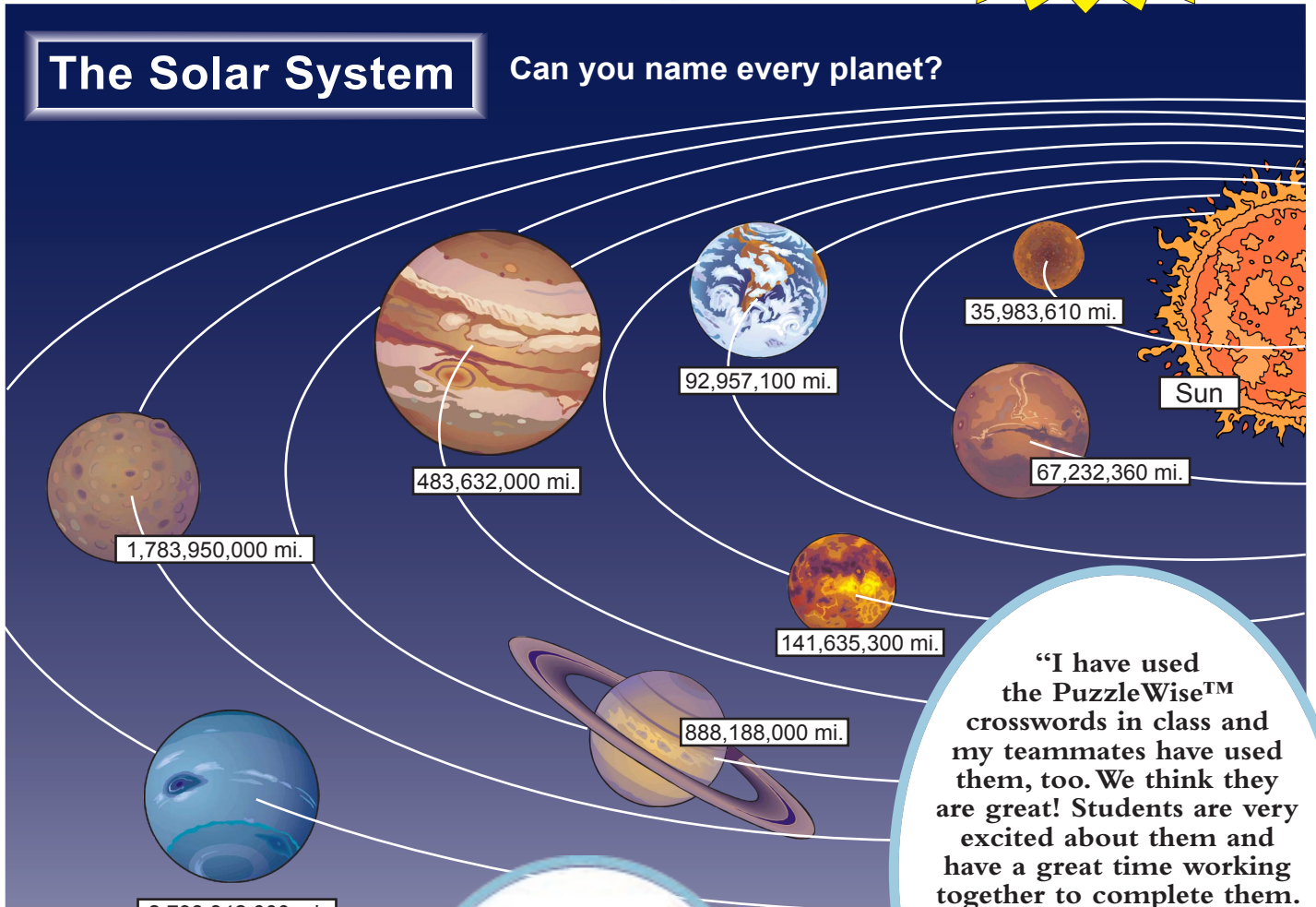
PUZZLEWISE™

SCIENCE Level 4

Over 900 science skill and science literacy builders!

The Solar System

Can you name every planet?



“I have used the PuzzleWise™ crosswords in class and my teammates have used them, too. We think they are great! Students are very excited about them and have a great time working together to complete them. It’s a fantastic review of the vocabulary and concepts. PuzzleWise™ crosswords have been perfect!”

— Wendy Tedford,
Fourth Grade Teacher

“Truly an exceptional way to help students learn the skills necessary for success in school and become life-long learners. Fun, purposeful, and innovative!”

— Dr. Betsy Rogers
National Teacher of the Year, 2003

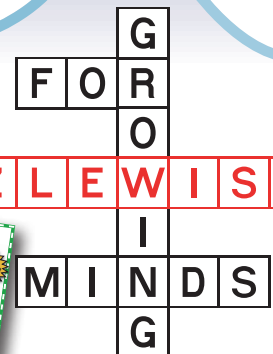
“These puzzles stretch your mind to new limits.”

— Larissa V.
Student

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