FUTURE PROBLEM SOLVING PROGRAM
OPENING DOORS TO STANDARDS

Schools require an effective model to teach critical and creative thinking, problem solving and decision-making. Few elementary, middle and high schools offer problem solving in the curriculum even though it is a standard or goal in almost every state. Future Problem Solving is an excellent vehicle to teach problem solving strategies across the curriculum while promoting the development of student leadership skills.

The Future Problem Solving Program (FPSP) is a nonprofit educational corporation administering creative problem solving activities for students in grades K-12. FPSP stimulates critical and creative thinking skills and encourages students to develop a vision for the future. Recognizing the world as an interdependent global community, the Future Problem Solving Program involves over 250,000 students annually from the United States, Canada, Australia, New Zealand, Korea and other countries.

The Future Problem Solving Program features several curricular as well as co-curricular opportunities to engage students in problem solving including Team Problem Solving, Community Problem Solving (CmPS), Scenario Writing and Action-based Problem Solving (AbPS). Students or teams participate in one of three divisions in competitive FPS components: junior division - grades 4-6, middle division - grades 7-9 and senior division - grades 10-12.

The Future Problem Solving Program meets standards for curriculum and instruction, language arts, social studies, science, the arts, math, geography, civics, technology, life skills and behavioral studies. The Future Problem Solving Program provides opportunities for students to develop and exercise the skills necessary to meet and exceed these standards through research and investigation of student selected topics relevant to their world. Each year FPS topics are selected from three strands: business and economics, science and technology, and social and political issues.

The opportunities provided to students in both content and skill areas are the motivation for teachers and coaches who implement FPSP in their schools. This document is a summary version of a more comprehensive document demonstrating the alignment of curriculum standards, based on **National Curriculum Standards and the National Association for Gifted Children (NAGC) Curriculum and Instruction Standards**, and the Future Problem Solving Program's six-step problem solving model.

Using both primary and secondary resources, students conduct research on selected topics and then use the six-step problem solving model to address the problem or need area. The model is integral in all FPSP components.

1. Identify Challenges – generate challenges or issues related to the future scene or need area.

2. Select an Underlying Problem – focus on one problem area.

3. Produce Solution Ideas – generate solution ideas to the underlying problem.

4. Generate and Select Criteria – create criteria to evaluate the merit of the best solution ideas.

5. Apply Criteria to Solution Ideas – evaluate the solution ideas using criteria to rank order the solution ideas.

6. Develop an Action Plan – based on the highest scoring solution idea, develop an action plan explaining how the solution will work and describing how the problem will be solved.

TEAM PROBLEM SOLVING, COMMUNITY PROBLEM SOLVING, SCENARIO WRITING and CURRICULUM STANDARDS

Language Arts

Writing
- Gathers and uses information for research purposes on the selected FPS topics.
- Uses stylistic and rhetorical techniques in written composition.
- Uses grammatical and mechanical conventions in written composition for clarity of ideas.
- Uses the general skills and strategies of the writing process (pre-writing; drafting and revising; editing and publishing).

Reading
- Uses the general skills and strategies of the reading process while researching the topics.
- Uses reading skills and strategies to understand and interpret a variety of literary works to discern pertinent research information.
- Uses reading skills and strategies to understand and interpret a variety of informational texts in topic research.

Viewing
- Uses viewing skills and strategies to understand and interpret visual media for research information on the topics.

Listening and Speaking
- Uses listening and speaking skills and strategies for a variety of purposes.

Math

- Understands and applies basic and advanced concepts of statistics and data analysis to interpret research topic information.
- Understands and applies basic and advanced concepts of probability to interpret topic research.
- Uses basic and advanced procedures while performing the process of computation.
- Uses a variety of strategies in the problem solving process to prepare budgets and the use of possible grant monies.
- Understands and applies basic and advanced properties of the concepts of numbers in research and in developing surveys.
- Understands and applies basic and advanced properties of the concepts of measurement in designing different aspects of a project.
- Understands and applies basic and advanced concepts of statistics and data analysis to keep accurate records of project activities.

Life Skills

Life Work
- Uses various information sources, including those of a technical nature, to accomplish specific tasks to obtain a variety of information on the topics.
- Makes effective use of basic tools during the implementation of the project.
- Uses various information sources, including those of a technical nature, to accomplish specific tasks.
- Makes effective use of basis life skills in overcoming unexpected challenges.
- Displays reliability and a basic work ethic to bring a community project to completion.
- Operates effectively within organizations to obtain assistance in a community project.

Life Skills

Thinking and Reasoning
- Understands and applies basic principles of logic and reasoning.
- Understands and applies the basic principles of presenting an argument.
- Effectively uses mental processes that are based on identifying similarities and differences (compares, contrasts, classifies).
- Applies basic problem-solving techniques.
- Applies decision-making techniques.

Working with Others
- Uses conflict-resolution techniques when disagreements occur.
- Works well with diverse individuals and in diverse situations.
- Displays effective interpersonal communication skills.
- Contributes to the overall effort of a group.
- Demonstrates leadership skills when making decisions.

Technology

- Understands the nature and uses of different forms of technology to obtain topic research.
- Understands the relationship among science, technology, society and the individual.
- Understands the nature and operation of systems.
- Understands the nature and uses of different forms of technology.

Behavioral Studies

- Understands conflict, cooperation and interdependence among individuals, groups and institutions.
- Understands that group and cultural influences contribute to human development, identity and behavior when working on a project in a multi-cultural community.
- Understands various meanings of social group, general implications of group membership and different ways groups function to involve various groups in a project.
- Understands that interactions among learning, inheritance and physical development affect human behavior in order to respond appropriately to a variety of situations.

TOPIC AND CONTENT SPECIFIC STANDARDS

Science

Nature of Science
- Understands the nature of scientific knowledge as it relates to FPS topics.
- Understands the nature of scientific inquiry when conducting investigations using systematic observation and logical reasoning to research FPS topics.
- Understands the scientific enterprise as the catalyst for many FPS topics as societal challenges often inspire scientific research.

History

- Understands and knows how to analyze chronological relationships and patterns to forecast trends.
- Understands the historical perspective in relationship to its impact on the future.

Civics

What is Government and What Should it Do?
- Understands ideas about civic life, politics and government through exposure to multiple topics.
- Understands the sources, purposes and functions of law and the importance of the rule of law for the protection of individual rights and the common good as it relates to challenges in the development of future societies.

Geography

The World in Spatial Terms
- Knows the location of places, geographic features and patterns of the environment through the exposure to global issues.

Places and Regions
- Understands the physical and human characteristics of place through the use of parameters in future scenes.
- Understands the concepts of regions through topics relating to specific areas.
- Understands that culture and experience influence people's perceptions of places and regions through cultural diversity of the topics.

Environment and Society
- Understands how human actions modify the physical environment as it relates to future attributes of the environment.
- Understands the changes that occur in the meaning, use, distribution and importance of resources in relationship to the possibility of the depletion of resources in the future.

Uses of Geography
- Understands global development and environmental issues through exposure to topics that focus on global awareness.

Economics

- Understands that scarcity of productive resources requires choices that generate opportunities by applying these concepts to research, challenges, solution ideas and development of an action plan.
- Understands characteristics of different economic systems, economic institutions, and economic incentives as they relate to FPSP topics.
- Understands basic features of market structures and exchanges.
- Understands basic concepts of United States fiscal policy and monetary policy, as well as basic concepts about international economics associated with FPSP topics.

The Arts

Visual Arts
- Understands action plan and applies media, technology and processes related to the visual arts in CmPS.
- Knows a range of subject matter, symbols and potential ideas in the visual arts.
- Understands the visual arts in relation to history and culture.
- Designs and produces informal productions in the presentation of action plan.

For a copy of the complete document, *Future Problem Solving Program – Opening Doors to Standards*, **or further information about FPSP and its activities including the International Conference, please contact:**

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