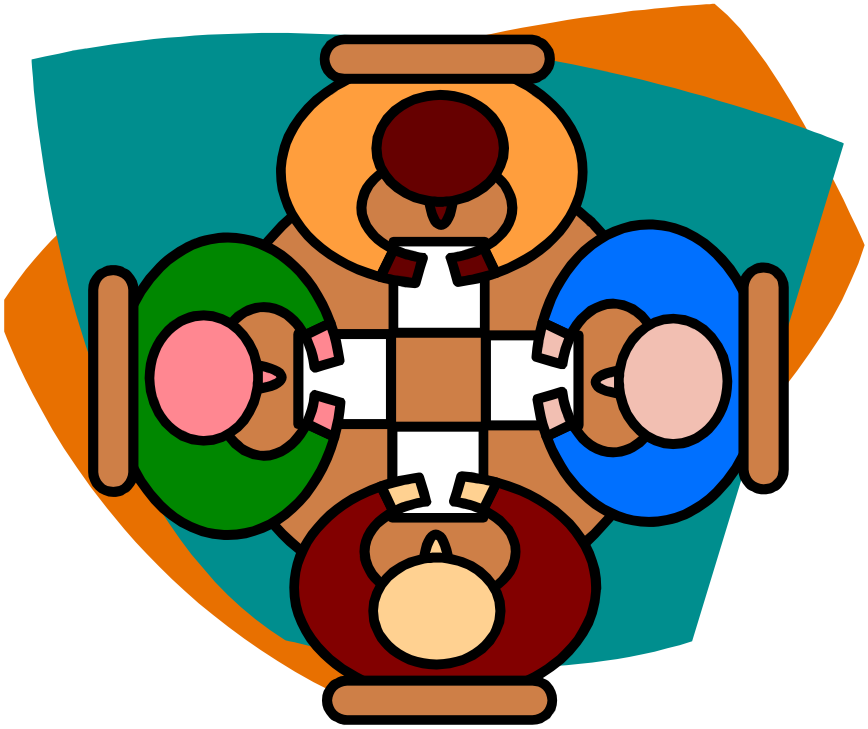
Future Problem Solving Program International

Global Issues Problem Solving



Coach Information
2015-2016

Future Problem Solving Program International

Global Issues Problem Solving Overview

What is Global Issues Problem Solving?

Global Issues Problem Solving (GIPS) is a competitive component of Future Problem Solving Program International (FPSPI). It is a team or individual activity in which participants research a series of global topics and learn a six-step creative problem solving process. In competition, participants apply their knowledge and the problem solving process to address a Future Scene, an imagined situation set in the future. Topics for the Future Scenes include global issues in the areas of business and economics, science and technology, and social and political areas. Each year five topics are addressed: two practice problems, a qualifying problem, an Affiliate Bowl/Final problem, and the problem at the International Conference. Approximately forty-five states within the United States and fifteen countries throughout the world are Affiliate Programs or Mentored Regions involved in FPSPI.

Why Global Issues Problem Solving?

Future Problem Solving Program International provides the tools and strategies students need to face the challenges of today and the future. What better way to prepare students than by guiding them to learn in depth about topics of global importance, to systematically address related complex situations, and to evaluate multiple solutions in order to best address the situation through an Action Plan? Those involved in Global Issues Problem Solving practice powerful problem solving skills using critical and creative thinking. Participants improve their communication skills through collaboration and learning to write concisely with a specific focus in mind. The non-fiction/informational text reading skills, writing skills, and teamwork collaboration skills address many academic standards identified as critical skills by Common Core, STEM, 21st Century Skills, and NAGC (Nat'l Association for Gifted Children).

Who can participate in Global Issues Problem Solving?

Recent Topics in Business and Economics

Air Transportation
Counterfeit Economy
Debt in Developing Countries
Fund-raising and Charity Giving
Intellectual Property
Pharmaceuticals
Trade Barriers

Students may participate in competitive Global Issues Problem Solving in multiple divisions: Junior (grades 4-6 or the equivalent), Middle (grades 7-9), and Senior (grades 10-12), and an Adult division for team participation. Many Affiliates also offer options for non-competitive participation as young as kindergarten, including Action-Based Problem Solving, curricular programs, novice programs, and other Affiliate created options. Check with your Affiliate Program for more information.

What is the composition for GIPS?

Teams of four, or fewer, and individuals participate in Global Issues Problem Solving. The composition of the team does not have to be the same for each practice problem, as this is when the dynamics of a good team are being determined; however, rules apply to team composition from the qualifying problem through the international level. Students may compete in a division higher than their grade level, but not in a lower division. Coaches may work with multiple teams and individuals.

Recent Topics in Social and Political Areas

Child Labor
Culture of Celebrity
Cultural Prejudice
Human Rights
Megacities
Olympic Games
Orphaned Children

How can I get started with my students?

Training in the problem solving process is essential for Global Issues Problem Solving coaches. The GIPS "Key Tips for Coaches" provides information about each step of the problem solving process. Affiliate Programs often schedule workshops in the problem solving process. If you are not able to attend a workshop, you can find many valuable resources at fpspimart.org. "GIPS Essential Publications" highlights information focused on Global Issues Problem Solving. Contact your Affiliate Program for more information.

Recent Topics in Science and Technology

Coral Reefs
Food Distribution
Genetic Testing
Ocean Soup
Robotic Age
Space Junk
Water Quality

How do I register students for Global Issues Problem Solving?

Each Affiliate Program determines its own processes, fees, and due dates for registration and entries. Your Affiliate can provide you with registration and submission materials and may be able to put you in touch with experienced GIPS coaches. If you need contact information for your Affiliate, you can find it at fpspi.org under Affiliate Directory.

How are GIPS booklets evaluated?

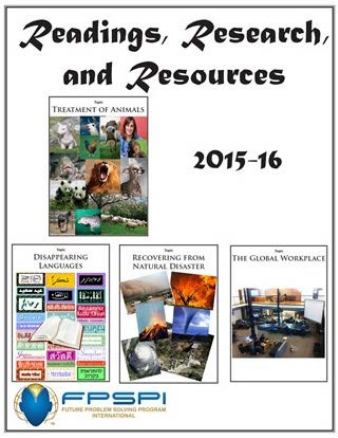
GIPS booklets are scored by trained evaluators who carefully read and assess the written booklets. (Competitive booklets consist of written pages covering the six steps of the problem solving process.) Some Affiliate Programs require that all coaches receive evaluation training and participate as evaluators. If yours does not, serving as an evaluator is highly recommended and always improves coaching skills!

Quality teams from the qualifying competition move on to the Affiliate Bowl and champion teams and individuals in each division at the Affiliate Bowl move on to the International Conference competition.

GIPS Essential Publications

Most coaches can't get along without these important resources from the FPSPI Catalog.
(Available at **www.fpspimart.org**)

Readings, Research, and Resources (RR&R)



Provides essential background information for coaches and students

For each of the first four topics of the year, the guide includes:

- **Terms and Definitions**
- **Overview**
- **Questions for Discussion**
- **Internet Resources**
- **Article Summaries**

$40 electronic/$45 binder ready

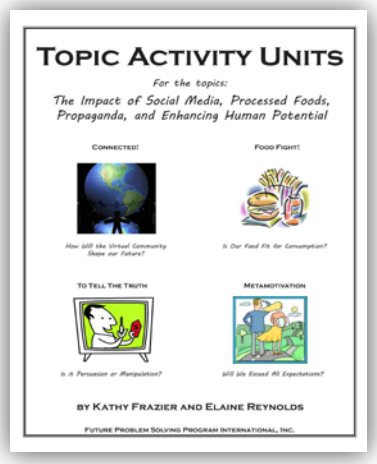
Topic Activity Units (TAU)

Provides a wide variety of instructional activities for preparation on the first four topics of the year

Can be used as a unit of study or activities may be used as desired for particular steps within the process

Includes activities for:

- **Researching and analyzing the topics**
- **Analyzing the process steps**
- **Writing the process steps**



$45 electronic/$50 binder ready

Combos

Combo #1 – Coach's Handbook, Student Guide Workbooks (4), Problem Solving across the Curriculum: $95 hard copies
Combo #2 – RR&R and Topic Q&A: $68 electronic, $75 binder ready
Combo #3 – RR&R and TAU: $79 electronic, $89 binder ready
Combo #4 – RR&R, TAU, and Topic Q&A: $110 electronic, $122 binder ready

More GIPS Essential Publications

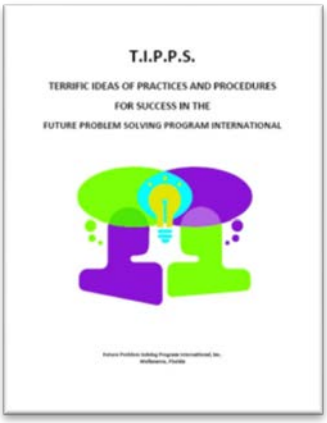
Check out these important resources from the FPSPI Catalog.
(Available at **www.fpspimart.org**)

Coach's Handbook

A comprehensive overview of Global Issues Problem Solving
A great resource for beginning coaches which includes:

- Six-step creative problem solving process
- Examples for each step
- Tips on teaching
- Exercises for improving team performance

$33 electronic/$35 binder ready



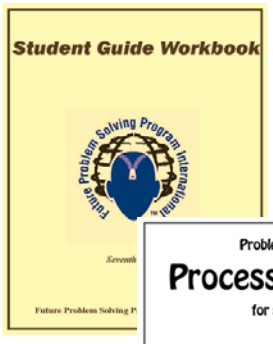
TIPPS – Terrific Ideas of Practices & Procedures

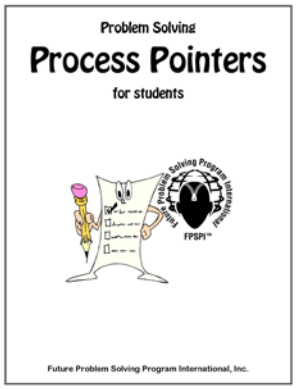
A collection of ideas, strategies, and techniques contributed by successful coaches
Addresses:

- Establishing and maintaining a program
- Strengthening teams
- Strengthening research skills
- Strengthening the problem solving process
- Strengthening creative, critical, and futuristic thinking
- Integrating problem solving into the curriculum, and MORE

$38 book

Problem Solving Process Pointers & Student Guide Workbook





Written for students, these "workbooks" provide plenty of practice.

- *Student Guide Workbook* introduces basic generating and focusing tools and guides beginning students through the six-step creative problem solving process. Explanations and examples are included.
- *Problem Solving Process Pointers for Students* includes hints for reading a Future Scene, the "anatomy" of each problem solving step, hints for thinking and writing, "build your own" guides, and writing practice.

$10 Process Pointers/$7 Student Guide Workbook

WARNING – DO NOT POST . . .

Future Scenes: Every Future Scene contains the following warning: ***Do not post on any website until 2019.*** This means that Future Scenes should not be posted on any unsecured site, anywhere or at any time, until that date.

The main reason for this policy is to make sure the confidentiality of Future Scenes is maintained for all Affiliate Programs.

- Different Affiliates have different calendars, especially those in the southern hemisphere where the school year begins and ends much differently from the northern hemisphere; thus, they may be using a Future Scene at a much later date.
- Affiliate Programs are free to change the order of topics. For example, the Future Scene identified for practice problem #2 could conceivably be used as the qualifying problem by another Affiliate; therefore, practice problems must also be kept confidential.

Videos/Images: "Do Not Post" also applies to any videos, such as Presentation of Action Plan or images that might include details from Future Scenes.

Evaluation Notes: Evaluation notes from any topic may not be posted on any publically accessible site as they provide specific details of the Future Scene.

FPSPI Publications: A purchase of any publication entitles that person to use only with his/her students. Such publications should be posted only on secure sites to which only his/her students have access.

Those found to have violated this policy will be charged $500 per incident, plus additional costs incurred by the International Office and other Affiliate Programs and Mentored Regions.

Thank you in advance for complying with this policy!

GIPS: Overview of the 2015-16 Competition Year

For each topic, individuals or teams of 4 or fewer persons research and study a topic area and complete a written problem solving booklet based on the provided Future Scene. A team of evaluators assesses the booklets and provides extensive written feedback focused on improvement of writing and thinking skills. See your Affiliate Calendar for submission due dates.

Practice Problem 1

Topic for study:	TREATMENT OF ANIMALS
Steps completed:	Steps 1-3: Challenges, Underlying Problem, Solutions
Participants:	Any students of registered coach
Working conditions:	Flexible, based on educational needs of students, guidance is recommended for young or beginning students

Practice Problem 2

Topic for study:	DISAPPEARING LANGUAGES
Steps completed:	All 6 steps
Participants:	Any students of registered coach
Working conditions:	Flexible - based on educational needs of students, some guidance recommended for students in first couple of years, may do booklet work in 2 hour practice session to prepare for qualifying problem

Qualifying Problem

Topic for study:	RECOVERING FROM NATURAL DISASTER
Steps completed:	All 6 steps
Participants:	All registered teams/individuals
Working conditions:	"Competitive" conditions must be met: 2 consecutive hours, unassisted, no notes Note: Top teams qualify for Affiliate level competition

Affiliate Bowl (also called State Bowl or National Finals)

Topic for study:	THE GLOBAL WORKPLACE
Steps completed:	All 6 steps
Participants:	Teams/Individuals advancing from qualifying problem (Affiliates vary selection of participants for advancement)
Working conditions:	"Competitive" conditions must be met: 2 consecutive hours, unassisted, no notes, usually on-site

International Conference

Topic for study:	TOPIC ANNOUNCED BEGINNING OF MARCH
Steps completed:	All 6 steps
Participants:	First place teams from Affiliate Bowls and Mentored Regions are invited; Affiliates may qualify for additional invitations according to scale (size of program)
Working conditions:	"Competitive" conditions are in place: 2 consecutive hours, unassisted, no notes; on-site only

The Creative Problem Solving Process

Global Issues Problem Solving (GIPS) is based on the Creative Problem Solving (CPS) process, a powerful process that can be applied to many complex situations in education, business, community, and personal settings.

1. Identify Challenges
(16/team; 8/individual)

- Generate issues, concerns, and problems, applying background knowledge to the Future Scene.
- Consider major issues and categories of problems in order to think of more challenges.
- Select the sixteen best challenges.
- Write the sixteen challenges clearly and concisely, showing cause and effect and tying directly to the Future Scene.

2. Select an Underlying Problem (UP)

- Consider the major issues in the sixteen challenges.
- Select an issue, one that will have a major impact on the Future Scene, for the focus of the Underlying Problem.
- Be forward-looking and proactive, not regressive and reactive, in developing the Underlying Problem.
- Write the Underlying Problem in correct format, beginning with the Future Scene conditions that are the basis or rationale for the idea.
- Indicate a desired action to be taken, a purpose for the desired action, and parameters tying the problem to the Future Scene.

3. Produce Solution Ideas
(16/team; 8/individual)

- Generate multiple solutions to the Underlying Problem.
- Think futuristically and consider the use of technological advances.
- Focus in on the sixteen best solution ideas, checking that each solution addresses the Underlying Problem.
- Write the sixteen solutions clearly.
- Elaborate by telling who will implement the solution, what action will be taken, and how or why the action will be taken.

4. Generate & Select Criteria

- Considering the UP and the Future Scene, generate possible criteria that could be used to evaluate the solutions.
- Select five important criteria.
- Write criteria in question format using the superlative form, one dimension, and the desired direction.

5. Apply Criteria

- Select the eight most promising solutions and write in the grid.
- Rank each solution based on each of the criteria.
- Identify the best solution (highest number of total points).
- New in 2015-2016: Pilot option is available in Middle and Senior Division for ALoU in place of the grid. (Advantages, Limitations, ways to overcome, and Unique possibilities)

6. Develop an Action Plan

- Plan how the best solution can be implemented.
- Describe the actions and steps of the plan.
- Clearly state how the plan will address the Underlying Problem and impact the Future Scene.

Category List for Generating Ideas

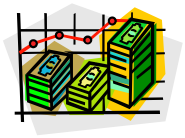
1 Arts & Aesthetics 

2 Basic Needs 

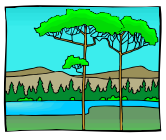
3 Business & Commerce 

4 Communication 

5 Defense 

6 Economics 

7 Education 

8 Environment 

9 Ethics & Religion 

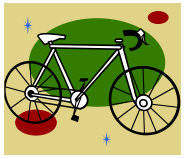
10 Government & Politics 

11 Law & Justice 

12 Miscellaneous 

13 Physical Health 

14 Psychological Health 

15 Recreation 

16 Social Relationships 

17 Technology 

18 Transportation 

Evaluation Criteria for Global Issues Problem Solving

See "Key Tips for Global Issues Problem Solving" for in-depth explanations.

Step 1 / Challenges

The marks:

- **Y** *Yes!* This is a possible challenge.
- **P** *Perhaps* this is a challenge. Explain more completely.
- **W** *Why* is this a challenge? The evaluator cannot see the connection.
- **S** This is a *solution* idea instead of a challenge.
- **D** This challenge is a duplicate – too similar to another one.

Fluency measures the quantity of *Yes* challenge ideas.
Flexibility measures the number of different categories covered by the *Yes* challenges.
Clarity measures the quality of the writing and the cause-effect reasoning in the challenges.
Originality is awarded for innovative ideas not generated by most other teams.

Step 2 / Underlying Problem

Condition Phrase, Stem+Key Verb Phrase, purpose, and parameters are the required elements in the UP.
Focus looks at the scope of the UP and whether it is too broad or too narrow.
Adequacy judges the importance of the UP and the impact on the Future Scene.

Step 3 / Solution Ideas

The marks:

- **R** This is a *Relevant* solution that addresses the Key Verb Phrase of the UP and supports the purpose.
- **P** *Perhaps* this is a solution. Explain more completely.
- **W** *Why* is this a solution? Does not seem to address the KVP and/or purpose.
- **D** This solution idea is a duplicate – too similar to another one.

Fluency measures the quantity of *Relevant* solution ideas.
Elaboration rates the number of *Relevant* solutions with three areas of significant detail.
Flexibility rates the number of different categories covered by the *Relevant* solutions.
Originality is awarded for innovative ideas not generated by most other teams.

Step 4 and 5 / Criteria and Grid

Correctly Written judges the correct structure of a single standard, superlative, and desired outcome.
Relevance judges whether the criteria apply to the UP or Future Scene and whether each criterion is generic or specific to this UP.
Correctly Used judges to what extent the grid is completed accurately.

NOTE: An Affiliate Program piloting the ALoU option for Middle and Senior Divisions utilizes scoring for *Selection of Solutions, Reference to Criteria*, and *Quality of each ALoU* table rather than "*Correctly Used.*"

Step 6 / Action Plan

Relevance measures the relationship of the plan to the Underlying Problem KVP and purpose.
Effectiveness evaluates how well the plan successfully solves the UP.
Impact determines to what extent the plan will have a positive impact on the Future Scene.
Humaneness measures the productive, positive potential of the plan.
Development of Plan measures how well a comprehensive, workable plan has been presented.

Overall

Research Applied rates the application of research shown throughout the booklet.
Creative Strength measures the creative, productive thinking shown in the booklet.
Futuristic Thinking evaluates how well the team has addressed issues of the future.

GIPS Successful Coaching Tips

PLEASE REVIEW CAREFULLY PRIOR TO BEGINNING WORK WITH STUDENTS.

Age Appropriateness of Research Materials

In every Global Issues Problem Solving (GIPS) topic, large areas of research information are available that are appropriate for all ages; however, in some topics content may be more controversial or sensitive and may not be appropriate for younger students. **It is the responsibility of the coach to preview and monitor materials for age appropriateness** and to work with parents to ensure their support for the materials that students use.

Suggestions for Involving Parents with Global Issues Problem Solving

1. **Overview for parents**: Consider holding a meeting for the parents of your team members early in the year. At that time, you can explain the problem solving process, discuss the topics for the year, and invite parents to research along with their students. You may be able to piggy-back on back-to-school nights or open houses.

2. **Clarify the topics for the year**: Be sure that parents know what topics are being studied for the practice problems. For any sensitive topics, let parents know how you plan to handle the research. In this case, you may want to get signed parent permission for students to research the topics. You can assure parents that all Future Scenes will be age appropriate for all students. Future Scenes for problems 1 and 2 can be shared with parents before students complete the booklet.
3. **Clarify the components**: If you will be using more than one component of FPS (Global Issues Problem Solving, Scenario Writing, Scenario Performance, Community Problem Solving), be certain that students and parents understand the difference between each component.
4. **Clarify program viewpoints**: Let parents know that the focus of GIPS is on the process and on teaching students how to think, not what to think. Explain that the program itself does not support any particular viewpoints. Share statements from the front of the research manual that explain the FPS position.
5. **Establish a format for communication**: Let parents know how to contact you should they have any questions or concerns about topics or research. Invite them to review the *Readings, Research, & Resources* manual if you use it.
6. **Partner in research**: Encourage parents to become partners in research with their children. Develop specific activities or sharing formats for student/parent teams.
7. **Research via internet**: Carefully monitor any internet research that students do under your supervision. Remind parents to monitor their children's internet activities at home.
8. **Include local speakers**: Invite parents to help you locate and set up local speakers on the topics of study. Invite all parents to attend these special presentations.

9. **Invite parents in to observe**: Invite parents to observe your work sessions with students. Once students understand the problem solving process, invite parents to join the students in solving a "mini-scene." Allow only 5-10 minutes for each step so that the process is completed in an hour or so and eliminate the formal writing.

10. **Obtain permission for Affiliate, National, or International study**: Affiliate Bowl and International Conference topics may be more challenging than the practice topics. If your team qualifies for these levels of competition, inform parents immediately about the topic. If necessary, you may want written permission for students to study for these topics.

Keep parents informed!

Team Formation

Small groups that work as teams are the core of the GIPS. Students learn to brainstorm together and to divide up the written work so that each team member contributes to the final problem solving booklet.

Coach/student ratio: Coaches may work with any number of teams and individuals. Although some coaches work with a single team, many work with up to six teams or more at a time. Some school districts invite many students to "try out" the first problem, and then work with a smaller group of students who want to commit to working on the second and third problems.

Team composition: Team members may vary from problem to problem. Many coaches change teams for each practice problem, so that students experience working with many different team members, but assign teams for the Qualifying Problem carefully. In most Affiliates, the four team members whose names appear on the Qualifying Problem cover sheet are invited to move on to the next competition.

Divisions: Students *should* participate in the division designated for their grade level. Students *may* participate in a higher division than their grade, but they *may not* participate in a lower division.

- Junior Division – grades 4, 5, 6 or the equivalent
- Middle Division – grades 7, 8, 9 or the equivalent
- Senior Division – grades 10, 11, 12 or the equivalent

Above all, share your enthusiasm for Future Problem Solving!

Non-Competitive Global Issues Problem Solving

Problem solving skills can easily be taught to your student non-competitive setting. If you are looking for a non-competitive activity, consider these details to determine which best fits your needs.

Action-Based Problem Solving (AbPS)

- AbPS is designed for integration into the classroom curriculum and can be used with the primary level (K-3) and up through grade 9.
- Teachers begin by purchasing an Action-Based Problem Solving manual from Future Problem Solving Program International (FPSPI). The manual provides instructional materials and lesson plans for initial learning of the problem solving process using easy children's stories.
- AbPS teaches a simplified version of the problem solving process, providing guidance in the writing of ideas. The materials may be used with a few students or with an entire class; either the teacher or the students may record the ideas that are generated; the work may be completed with complete teacher guidance or independently in small groups.
- Some Affiliates offer AbPS as a non-competitive component. In these Affiliates, registration provides two additional problem solving fuzzies for students to address, and the registration entitles the teacher to submit the students' work for evaluation twice during the year. Contact your Affiliate for more information.
- For registered coaches, information is also provided on conducting an Action-Based Problem Solving Fair where students address real problems within their school or community.

The Problem Solving Experience Curriculum

- *The Problem Solving Experience* is a complete curriculum targeted at grades 5-8. Portions of the curriculum may be used with younger or older students.
- The curriculum can be implemented as a full semester course, or spread across 1-4 school years. Complete lesson plans and resource materials are provided.
  (See the next page for more information.)

Problem Solving Across the Curriculum

- This publication provides copies of hundreds of Future Scenes that have been used in the Global Issues Problem Solving component over a number of years.
- Teachers may select Future Scenes to fit their curriculum and may modify the scenes to meet their students' educational needs.
- Training in teaching problem solving process skills is needed in order to make full use of these Future Scenes.

Action-Based Problem Solving
The Problem Solving Experience
Problem Solving Across the Curriculum
Available at fpspimart.org

The Problem Solving Experience:

Classroom Curriculum Designed to Promote Problem Solving in the 21st Century

The activities in this course are an outgrowth of the Future Problem Solving Program International, a program originally developed by E. Paul Torrance who was a pioneer in creativity. The curriculum provides direct instruction that introduces students to the creative problem solving process and then provides practice through the application of problem solving in a variety of contexts.

The curriculum is targeted at grades 5-8. It can be implemented as a full semester course, spread across a year, or split up across 2-4 years. There are also cross-curricular possibilities. The course consists of lesson plans for nine units, with extensive resources for each unit including handouts, and teacher reference materials.

Preparation for Problem Solving
Problem Solving Experience 1: Eensy Weensy Spider
Problem Solving Experience 2: The Elephant's Nose
Problem Solving Experience 3: Robin Hood
Problem Solving Experience 4: The Lorax
Problem Solving Experience 5: Harrison Bergeron
Problem Solving Experience 6: Smart Clothes
Problem Solving Experience 7: Digital Music Rights
Problem Solving Experience 8: Prejudice

Available at fpspimart.org

