Future Problem Solving

FPS Evaluation Manual
For Coach and Evaluator Certification
All Divisions

Component Event of
www.fp.spi.org
Materials for this manual have been adapted from the FPSPI competitive materials to meet KAAC Competition Standards
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2018-2019 FPS Scoring Reminders and Points of Emphasis

1. Scores of 1 are mandated for Focus and Adequacy in Step 2 if one or more of the follow Critical Errors is written in the booklet:
   - UP is a **Restatement**
   - PURPOSE is repeated in the Condition Phrase and/or the Key Verb Phrase
   - An **Absolute Verb** is used in the Key Verb Phrase
   - **NO Purpose** was written by the team
   - **Unrelated to** or **Ignores** or **Broadens the Future Scene**

2. To determine a **Restatement**, the KVP and Purpose must be reviewed. If there is a summary of the entire Future Scene, a revision of the intent of the charge that does not narrow the topic, or a generalization of the topic of the Future Scene, the UP will be scored as a Restatement.

3. An Underlying Problem that is too narrow or too extensive in its scope will now score a 2-3 in Focus.

4. The terms **Broaden**, **Broadening** or **Broadened** will be scored in the Focus and Adequacy box of 1 on the score sheet. This will be a critical error.

5. In circumstances where the UP is a **Restatement**; is **Circular**; or uses an **Absolute Verb**; is **Without a Purpose**; or is **Unrelated to**, **Ignores** or **Broadens the Future Scene**, the team may receive credit for a maximum of 25% of the total (16 MG/HS and 8 EL) possible solutions. **(Maximum of 4 for HS and MG and 2 for EL Divisions)**. This will be referred to as the **25% Rule** during FPS Clinics.

6. MG and HS Region will receive pre-scores for Steps 2, 4 & 5 which will be **mandated scores** to be included in the packet of booklets to be scored by each evaluator.

7. **Imposed Purpose** will be briefly discussed at the end of Step 2 as it is important to assist the evaluator when scoring the solutions in Step 3. The Future Scene Parameters must be included in the Imposed Purpose (written by the evaluator in brackets) of the Underlying Problem and have a link to the Future Scene Charge for any UP written without a Purpose by the participants.

8. **Criteria must have ALL 4 elements present to be scored as Correctly Written**: a single dimension, positive direction, a superlative and be recognizable as a question.

9. The 25% Rule when applied to an Underlying Problem with a Critical Error limits the number of Relevant solutions accepted in Step 3.

10. In the Elementary division, the criteria will now receive a Relevance score for **Generic or Specific**.

11. Assign a score of 1 point for **Relevance**, **Effectiveness** and **Impact** if the Action Plan has an UP is either Circular, a Restatement, uses an Absolute Verb in the KVP, is Without a Purpose, OR is Unrelated to, Broadens or Ignores the Future Scene. These UPs scored a one (1) in Focus and Adequacy and identified as one of the Critical Errors.

12. **Criteria in the Development of the Action Plan**—This is an assessment of the importance of the criteria selected by the team in Step 4 Criteria and do not have to be explicitly mentioned in the Action Plan to receive high scores.

13. FPS evaluators scoring at the State Finals **MUST** be certified as either a coach and/or evaluate at the Middle Grades or High School divisions or be a district-wide FPS coordinator. Trainers may evaluate at any division. **(JR FPS division coaches are eligible to evaluate at the State Finals.)** EL FPS coaches and/or evaluators working exclusively at the elementary level will not be permitted to score at the State Finals.
AFTER attending the 0 or 1 Year FPS Certification clinic:

1. Make a copy of your completed FPS Certification Booklet and Completed MG/HS Scoresheet. Keep this copy for your records.

2. YOUR BOOKLET FOR CERTIFICATION MUST BE POSTMARKED AND RETURNED TO KAAC, or a legible copy faxed or scanned to 502.223.0430 WITHIN 14 DAYS of attending your clinic. If your scored booklet for certifications is not postmarked, or received by the deadline, the booklet WILL NOT be processed for certification. The deadline to receive to process your booklet is December 12th, 2018 no matter when your December clinic is held.

KAAC—FPS Booklet for Certification
113 Consumer Lane
Frankfort, KY 40601
Fax: 502.223.0430
Certification numbers will be available sooner if booklets are scanned or emailed to:
kyfpscertification@gmail.com or bdarnell@kaac.com.
You may also clip a copy to your FPS Trainer at
____________________________________.

Ask for a READ RECEIPT when submitting your booklet.
If you do not receive a reply, your booklet did NOT transmit correctly. Check your Junk email folder and resend by dividing the booklet into two (2) emails with the INFO Sheet attached to both emails.

Processing of FPS Certification Numbers require a minimum of 4-6 weeks. Please check the website at kaac.com and link to FPS Certification for inquiries about your number before you call the office.

Before attending the 2+ Years FPS Certification clinic:

1. Check the list of last year’s names and certification numbers to see if you are eligible to take the 2+ FPS online certification.
2. References needed to complete certification:
   ➢ The 2018 FPS Evaluation Manual
   ➢ The 2018 FPS Booklet for Certification
   ➢ The 2018 FPS MG/HS Scoresheet
   ➢ The 2018 FPS 2+ Password (Trainer will give to you at the end of the clinic)
3. Login with your password at kaac.com and link to the 2+ FPS Certification within 14 days of your session. December attendees will have until December 12th to complete the online quiz no matter when the clinic date is held.
   FPS 2+ PASSWORD IS ____________________.
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2018-2019 GOVERNOR’S CUP and COMPONENT EVENTS CALENDAR
Future Problem Solving (FPS) is one of two team events of the Governor’s Cup Competition sponsored by the Kentucky Association for Academic Competition (KAAC). The rules in this manual are modified from the Future Problem Solving Program International (FPSPI) materials to meet the competitive standards adopted by the KAAC Board. KAAC component events include Junior FPS Division and Individual FPS. All events are judged by the same standards with differences for each noted in the chart on page 4. As coaches give directions to teach students how to think and not what to think, the evaluator scores student work based on the requirements set forth in the FPS Evaluation Manual.

The following rules govern the coach and evaluator requirements for each Governor’s Cup team. A team of 4 students must complete and have a booklet scored by a certified FPS evaluator who is not the coach of the participating team for advancement to the next level of competition. Two certification rules impact participation in the FPS component of Governor’s Cup Competition:

1. The school FPS coach must be certified before the FPS team can participate in District FPS competition. To obtain a KAAC FPS certification, attendance at a KAAC FPS clinic and the return of a completed FPS Certification Booklet within the specified timeframe is required. If a school does not have an FPS certified coach the team cannot participate in the Governor’s Cup District competition. The coach does not have to be present during the competition. The team must be accompanied by an adult representative.

2. Each FPS team competing in District, Regional or State FPS competition must provide a certified evaluator. To obtain a KAAC FPS certification, attendance at a KAAC FPS clinic and the return of a completed FPS Certification Booklet within the specified timeframe is required. NO COACH OR IMMEDIATE RELATIVE OF AN FPS TEAM MEMBER MAY EVALUATE IN HIS/HER OWN DISTRICT COMPETITION. A coach in one District may fulfill the FPS evaluator requirement in another District. For questions, call KAAC for additional information. Coaches or immediate relatives may evaluate in Regional competition. At this level of competition no one is assigned to score a booklet from the school the evaluator represents. Schools within the same division within a District may not share the same evaluator. If a school fails to supply a certified evaluator, the FPS team cannot participate in the FPS component of Governor’s Cup Competition.

The following individuals can earn FPS evaluator certification as your school’s required evaluator:

- Community volunteers: government, business & industry, service organizations
- Teachers, counselors, principals, and other school personnel
- Parents and relatives who have a child on the FPS team may evaluate at Regional and State levels only
- FPS coaches from another FPS competition level; FPS coaches from another District may score at any level
- The Quick Recall coach
- College students who are at least one year past high school graduation may coach or evaluate at any level
- High school students may evaluate in the elementary grade level only
GUIDELINES FOR EVALUATION
2018-2019 Future Problem Solving Program (FPS)

PURPOSE OF EVALUATION
The primary purpose of evaluation is to provide coaches and students with feedback that allows them to develop and improve their problem solving skills. Team FPS is performance-based and evaluation is authentic assessment of the team’s booklet. Because there is no single “right” answer, FPS employs a variety of strategies to review student work. Specific criteria evaluate performance in each step of the process. Skill improvement remains the most important aspect of evaluation; however, since FPS also involves competition, and competitive scoring must be impartial, a secondary purpose of evaluation is to provide a fair, consistent and reliable method for comparing teams in the Future Problem Solving competition.

PREPARATION
Knowledge is Necessary! Before evaluating booklets for any topic, evaluators should know the topic and develop solid background knowledge of the competitive topic. Students can really lose respect for evaluators — no matter how valid the feedback is — if basic understanding of the material is not obvious. Reading the topic descriptor or several articles from the provided suggested readings (Appendices begin on Page 51), is necessary to gain topic knowledge necessary for evaluation. While you read and contemplate the ideas presented in the Future Scene and in the scoring briefs for evaluators to bring a high level of consistency in FPS evaluation, you must not discuss booklets with other evaluators. Questions regarding scoring should be directed to the FPS and Composition Coordinator. And while doing this, it is essential that evaluators maintain a positive attitude throughout the evaluation process.

SCORE SHEET COMPONENTS
Before you begin to score, make sure you are aware of the score sheet components. On the first page you must complete the box in the upper right corner of the first page. The evaluator certification number is also required. Before you begin to score any FPS booklets, review the score sheet for specific descriptors for each step of the FPS evaluation process to determine the numerical score and record scores for each step and include the final rank.

FEEDBACK
The better evaluators offer constructive feedback and make students want to improve their problem solving skills. Regardless of the quality of the student effort, effective feedback praises students for what they did well and encourages them to use their improved skills to tackle the next problem. Negative feedback may discourage a team and keep them from improving, defeating the purpose of the program. You can reference these types of feedback as you score. Examples of brief phrases or statements are included on the next page.

Praise: Evaluator acknowledgements of a team’s effort, creativity, and major strengths
- Reinforces positive aspects of a team’s performance
- Establishes a good working relationship between the evaluator and problem solvers
- Rewards the team/individual for facing a problem and developing a solution idea
- Reminds the team/individual, even if the score is not high, they did some things right and encourages them to improve

Clarification: Evaluator comments asking students to clarify ideas
- Points out statements that may be confusing or unclear and offers suggestions for improvement
- Encourages students to improve the clarity and elaboration of their work
- Promotes the development of effective communication skills

Criticism (Ideas for Improvement): Evaluator suggestions for areas needing improvement
- Helps students build their skills with specific, constructive comments
- Gives students examples of ways to use their ideas, research, or the problem solving process more effectively
- Encourages students to learn from their work to become better problem solvers

Amplification: Evaluator comments that help students expand their ideas, push their thinking even further, and improve the quality of their problem solving
- Points out gaps in information or logic
- Helps improve their planning for a GIPS booklet
- Identifies other ideas that might be considered
- Prompts students to consider the possible consequences of their ideas
- Lists positive, constructive ideas for improvement
ATTITUDE

It is essential that evaluators maintain a positive attitude throughout the evaluation process through feedback. Providing constructive feedback can help students to improve their problem solving skills. Below are examples of feedback that can be used during the evaluation process.

<table>
<thead>
<tr>
<th>AVOID Negative Criticism</th>
<th>USE Praise, Clarification, Improvement Ideas, Amplification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poorly written</td>
<td>I was not sure what you meant. Show how this fits into the Future Scene. Add details to let us know more about how this will work.</td>
</tr>
<tr>
<td>Trivial issue</td>
<td>This issue is related to the FS but focusing on ... or ... would have more impact on the situation.</td>
</tr>
<tr>
<td>Disorganized Action Plan</td>
<td>Try giving us a step-by-step plan. Tell us what needs to happen first, then next, etc.</td>
</tr>
<tr>
<td>Impossible</td>
<td>How would this work?</td>
</tr>
<tr>
<td>Incomplete UP</td>
<td>Try assigning a team member to remember each part of the UP.</td>
</tr>
<tr>
<td>Wrong info</td>
<td>Be sure to reference information in the FS accurately.</td>
</tr>
</tbody>
</table>

THE FEEDBACK SANDWICH

The sandwich is too much for individual challenges and solutions, but it is great for the comments after each step.

- Make a positive comment
- Suggest something that could be improved
- Tell one way to improve it
- End with another positive comment

Sample: Terrific "today" thinking. Now work on making these ideas more futuristic. For example, try to think of new technology that could be used in your solutions. You’ve got a real spark here.

WAYS TO SAY...

<table>
<thead>
<tr>
<th>...way to go!</th>
<th>...you’re nearly there</th>
<th>...oops!</th>
</tr>
</thead>
<tbody>
<tr>
<td>You must be proud of this.</td>
<td>You’ve nailed the first step really well.</td>
<td>Check that your ideas are clearly written. Remember that you don’t get a chance to talk to me.</td>
</tr>
<tr>
<td>Pat yourselves on the back.</td>
<td>Good basic skills. Now let your imagination fly.</td>
<td>Great start. Work on choosing an important UP and make sure your solutions solve all of it.</td>
</tr>
<tr>
<td>First class all the way.</td>
<td>Good ideas. Aim for even more details.</td>
<td>Great teamwork. Work with your coach to improve your criteria.</td>
</tr>
<tr>
<td>The mountaintop is in sight.</td>
<td>Wonderful creativity. Show how you are thinking in the timeframe of the Future Scene.</td>
<td>Good effort on this problem. GIPS is challenging in the beginning, but it’s great when you get comfortable with it.</td>
</tr>
<tr>
<td>You really met the challenge.</td>
<td>You have very strong problem solving skills. Challenge yourself to show even more futurism (or creativity).</td>
<td>I can see you’ve done lots of research. Now link all your ideas to the Future Scene.</td>
</tr>
<tr>
<td>Thanks for sharing your creativity with me.</td>
<td>Your creative strengths are shining through. Add some research to increase your excellence.</td>
<td></td>
</tr>
<tr>
<td>The world will thank you for caring.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hats off to you!</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I applaud your effort.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>You’ve gone that extra mile.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thumbs up!</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Give yourselves a standing ovation.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Creative and futuristic – hurray!</td>
<td></td>
<td></td>
</tr>
<tr>
<td>You show great flair.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

An evaluator’s comments enable students to focus their learning process and allows the coach to adapt the problem solving instruction to meet the needs of the students. Use the chart above to help give feedback.

It is important for evaluators not to confuse their personal expectations and skill level with that of the students represented in an evaluation sample. Evaluators should be able to discern the sophistication of the task and should consider the age/division of the team in constructing positive feedback. Once an exceptional booklet is noted, it may be easy to expect the same quality from all booklets. Evaluators should remember the completion of an FPS booklet is, by itself, a major accomplishment - possibly more demanding than anything else the students have attempted as part of their educational experience. Students’ work may delight and/or frustrate the evaluator, but the effort will eventually reward the evaluation task. Providing consistent, positive and constructive feedback is the goal to which all evaluators must aspire.
COMPARISON of FPS EVENTS
EL - MIDDLE GRADE - HIGH SCHOOL REQUIREMENTS
JUNIOR DIVISION AND INDIVIDUAL FPS REQUIREMENTS

There are differences in FPS competition and scoring for the different events and divisions. The majority of the differences, however, is mechanical, rather than changes in the FPS process. The following is a comparison:

<table>
<thead>
<tr>
<th>Component events (JR Team &amp; Individual Divisions)</th>
<th>Elementary Governor’s Cup</th>
<th>Individual FPS All Divisions</th>
<th>Middle Grade / High School Governor’s Cup</th>
<th>Junior FPS Division</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>8 Challenges</td>
<td>8 Challenges</td>
<td>16 Challenges</td>
<td></td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td>1 Underlying Problem</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 3</td>
<td>8 Solutions</td>
<td>8 Solutions</td>
<td>16 Solutions</td>
<td></td>
</tr>
<tr>
<td>Step 4</td>
<td>5 Criteria</td>
<td>5 Criteria</td>
<td>5 Criteria</td>
<td></td>
</tr>
<tr>
<td>Step 5</td>
<td>4 Solutions</td>
<td>5 Solutions</td>
<td>8 Solutions</td>
<td></td>
</tr>
<tr>
<td>Step 6</td>
<td></td>
<td>1 Action Plan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Time to Compete</td>
<td>90 Minutes</td>
<td>120 Minutes</td>
<td>120 Minutes</td>
<td></td>
</tr>
</tbody>
</table>

**Differences in Scoring Booklets**

<table>
<thead>
<tr>
<th>Scoring Step 1</th>
<th>Fluency (1-8) Flexibility (1-8) Clarity (1-8) Originality (1 per)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scoring Step 2</td>
<td>Condition Phrase (0—2) Stem (0 or 1) KVP (0—3) Purpose (0—3) FSP (0—3) Focus (1-6) Adequacy (1-6)</td>
</tr>
<tr>
<td>Scoring Step 3</td>
<td>Fluency (1-8) Elaboration (0-8) Flexibility (1-8) Originality (1 per)</td>
</tr>
<tr>
<td>Scoring Step 4 &amp; 5</td>
<td>Correctly Written (0-5) EL R (0-10) Grid Used Correctly (0-5)</td>
</tr>
<tr>
<td>Scoring Step 6</td>
<td>Relevance (1—5 ) Effectiveness (1—5 ) Impact (1—5 ) Humaneness (1—5 ) Criteria in the Development of the AP (1-5) Development of AP ( 1—10)</td>
</tr>
<tr>
<td>Scoring Overall</td>
<td>Research Applied (1-6) Creative Strength. (1-6) Futuristic Thinking (1-6)</td>
</tr>
</tbody>
</table>

Component events (JR Team & Individual Divisions) registrations include required evaluator information.

**THE SCORING PROCESS**

The FPS process contains both objective and subjective processes. Students are given a Future Scene that is a hypothetical description of a particular problem within the declared topic. Their task is to solve the central problem in the Future Scene by using the FPS process; therefore, students are asked to think subjectively and to think beyond traditional solutions. FPS booklets are not multiple-choice, true-false, or fill-in-the-blank tests. They are not graded as having right or wrong answers; rather, they are evaluated using the objective standards of the FPS program. Evaluators are asked to score FPS booklets using the standards in the FPS Manual, as well as any Evaluator’s Notes that accompany the Future Scenes.

We are humans, using human judgment, which makes us subjective beings. What is the result? One evaluator may not look at a booklet the same way another evaluator will. But that’s okay. The most important thing to remember is that as an evaluator, YOU ARE CONSISTENT IN YOUR EVALUATIONS. In other words, all of the booklets that you evaluate are scored using your consistent framework of judgment.

Evaluators are given a copy of the Future Scene and supplemental evaluator notes. After reading the Future Scene, students must be able to identify the charge or directive given to the team. For the purpose of certification, the 2016 the Natural Disaster Future Scene on the next page will be used in this FPS Evaluation Manual and FPS Evaluation Manual Supplement as a reference. For the purpose of presenting the material for certification, the Middle Grade and High School chart will be the focus for this session. The FPS Booklet for Certification will use different materials to complete the KAAC FPS Certification process.
THE FUTURE SCENE

Student work must relate to the Future Scene. A Future Scene is a hypothetical, what-if, scenario based on current information projected at least 20-30 years into the future. Topics are announced months before any competition is scheduled to occur so that students can research the topic. In cases where research can be found that contradicts the Future Scene, the team is still required to problem solve within the boundaries of the given situation. The Future Scene used in this evaluation tool is below.

Practice Future Scene
2016 Natural Disaster

In the eve of the Diwali Festival Night, revelers were preparing for the feast that would end the annual Diwali celebration in the country of India. Homes and offices had been cleaned and decorated. Celebrants were dressed in their most beautiful finery. Dyas (laser lights and holo-candles) illuminated the night. Families gathered to offer puja (prayers) to the Hindu goddess of wealth and prosperity, Lakshmi. As the firework display lit the sky, disaster struck in the form of a 9.9 magnitude earthquake. The massive quake, deep beneath the Indian Ocean about 100 miles east of the island nation of Sri Lanka, triggered a series of tsunamis that killed more than 62,000,000 people in India, Sri Lanka, Bangladesh, Burma, Malaysia, Thailand, and Indonesia. The southern Asian continent was devastated. Effects of the underwater earthquake were felt even on the eastern shores of Northern Africa.

Residents tried to flee to high ground to avoid the massive waves that covered their lands and homes. CNN reported that it was a miracle that anyone was able to survive. Families were destroyed as family members, especially children and the elderly, lacked the strength to battle the waves and were drowned and/or swept out to sea as the waves receded. Satellite images of the disaster and its devastation showed few remaining structures on the areas hit by the quake and the tsunamis. The waters of the Indian Ocean looked like the Pacific gyre with structural debris and dead bodies instead of plastic bottles polluting the waters.

The world had watched via live satellite holo-imaging – seemingly unable to take their eyes off the destruction. This modern “rubbernecking” caused many children and adults, especially in coastal areas, to become hyper-vigilant, unable to sleep or relax for fear that a natural disaster might occur. Psychologists adapted the term Panophobia (fear of everything) to encompass this unnatural fear of death by natural disaster. This fear combined with the psychological aftershock of Post-Traumatic Stress Disorder (PTSD) has created a massive mental health challenge for people even in areas of the world that were not in the immediate wake of the natural disaster itself.

That was two years ago in October 2036. Unfortunately, the devastation still can be seen across the area – resembling the destruction caused by nuclear war. Millions of the survivors remain homeless and starving. Economies of the affected nations were destroyed causing aftershocks throughout the business world. Stock markets still have not recovered and the cost of living within the affected areas has skyrocketed. Limited resources have provided the opportunity for price gouging and black market sales in these areas to continue to ravish victims of the oceanic cataclysm.

According to the United Nations FAQ report, nearly 20,000 children under the age of five die of hunger or preventable disease every day within the area. This natural disaster has caused the greatest loss of life and of infrastructure in history. Relief efforts have been too few and too ineffective. Billions of dollars donated to charities specifically designed to alleviate the problems in the area have been mismanaged and thus, have not provided essential needs for the affected nations.

Future Problem Solvers from across the globe, the UN has asked for your help in this situation. Realizing that efforts up until now have shown limited success, we need to do something – anything – that can help the Asian nations affected by this natural disaster. Please use your problem solving skills to analyze the challenges created by this natural disaster. Choose an Underlying Problem and develop an Action Plan to help the people within this area to restore their lives.
Evaluating the Six Step Process

STEP 1—IDENTIFY CHALLENGES

OBJECTIVE: Identify 16 challenges (8 for elementary) within the boundaries of the Future Scene and written in statement form.

<table>
<thead>
<tr>
<th>Fluency</th>
<th>Flexibility</th>
<th>Clarity</th>
<th>Originality</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6 7 8</td>
<td>1 2 3 4 5 6 7 8</td>
<td>1 2 3 4 5 6 7 8</td>
<td>1 x ___ = ___</td>
</tr>
</tbody>
</table>

NO WORK ATTEMPTED ........................................................................................................... 0

Content: A challenge is an issue, concern, or problem that may need attention or consideration (points of importance). A Challenge is a logical cause or effect of the situations in the Future Scene that may have a strong chance of occurring. Flexibility in thinking is demonstrated by exploring challenges from different perspectives or categories.

Structure: Well-written challenges follow these guidelines:
1. Challenges are written in statement form. Questions are inappropriate for this step.
2. A challenge does NOT have to be directed to the Future Scene charge, but must relate to the Future Scene.
3. Challenges are stated in terms of possibility, using non-absolute terms such as may, might, could, etc. Using definitive statements, or stating a challenge as absolute by using terms such as will, deny an important element of the FPS process. It is impossible to know what will or will not occur in the future. We can only make educated guesses as to possible occurrences, based on investigation of the resources. Challenges consistently using definitive wording ("will" instead of may, might, or could) can only receive credit for a maximum of three challenges.
4. Extremes, such as “widespread death”, “economic ruin” or the “end of the world as we know it”, should be avoided due to one of these occurring in a real world situation does not have a strong likelihood.
5. A clearly written challenge has logical cause-effect reasoning and tells what the challenge is, why it is a challenge, and how it logically relates to the Future Scene.
6. If and ONLY if no work has been attempted on this section, a score of zero (0) will be awarded.

Cause-effect reasoning as an element of clarity in challenges
Cause and effect is the relationship between two things when one thing makes something else happen. By its very nature, a challenge embodies cause-effect reasoning – looking at causes whose effects can be seen in the Future Scene, or looking at the Future Scene details as causes and determining what effects may occur. There may be multiple causes for a single effect, and multiple effects from a single cause.

There are many signal words/phrases that indicate cause-effect relationships. The evaluator will probably see all of these in written challenges at one time or another!

Accordingly  Because  Due to  For this reason  Since  Therefore
As a result of  Consequently  If...then  Nevertheless  So that  Thus

Understanding the causes and effects of situations is essential in learning the basic ways the world works. Part of the clarity score is evaluating whether the cause-effect reasoning used in the challenges is logical.

A “reciprocal” cause-effect relationship is a chain. A cause leads to an effect, which then goes on to cause another effect, and so on. Most challenges with high clarity have at least two links within the chain. Challenges with too many links may become confusing, leading to lower Clarity. A cause-effect relationship that takes a “big leap” is probably missing parts of the chain, and is also lower in clarity. (Example: Because people are under stress, they may kill each other.)

FLUENCY (1-8) measures the quantity of Yes challenge ideas. The numerical score is based upon the number of YES challenges awarded. If a challenge is NOT considered a YES, then you MUST identify it as a Perhaps, Why, Duplicate or Solution and GIVE FEEDBACK to explain the rationale for the challenge not being scored Yes.

4
YES – Challenge has a strong possibility of existing or occurring if the Future Scene were to occur. Challenges must answer three (3) questions: What, Why and How.

- The cause/effect relationship is a logical cause of the Future Scene OR a logical result of the actions within the Future Scene. The cause/effect relationship should be clearly evident.
- An acceptable challenge may be a concern stated in the Future Scene provided that the team gives enough details to the evaluator to show a cause or effect relationship to the Future Scene.
- Challenges that merely restate a problem stated in the Future Scene are not awarded a Yes.
- A Yes may be awarded for challenges written at different levels of expertise, as shown in the examples. The focus is on the ideas, not the sophistication of the writing. As long as the challenge identifies what the concern is, why it is a concern and how it logically relates to the Future Scene, it must be awarded a YES in Fluency, even though you, as the evaluator, may have other ideas of its value.
- “Yes” responses will earn credit toward Fluency score.

The following are examples of the same YES challenge from the FPS topic Natural Disaster, but written at different levels of sophistication which also shows appropriate age levels:

a. There is devastation in the region. Trained experts may not want to travel to southern Asia because they are afraid to provide help to the survivors of the tsunami. [EL level] (Causes/Effect relationship relative to age level)

b. Some areas could have dead bodies. Illnesses may spread in the area of India affected by the tsunami. [EL level] (Causes/Effect relationship relative to age level)

c. Most often recovery methods focus on the physical needs of the victims and leave the emotionally and mentally traumatic needs of the people to receive attention near the end of the recovery process. [EL/MG level] (Explained what the challenge was and why it was a challenge)

d. The survivors may experience guilt because they survived the tsunami. As a result of this traumatic episode, the survivors may have lost the ability to take care of themselves. [EL/MG level] (Explained what the challenge was and why it was a challenge)

e. Since the tsunami struck India on the eve of the annual Diwali Festival Night, the memories of this devastating event may cause so much pain for the victims of the disaster, the event may be not be rescheduled. Since this event was such a part of the India culture for a time of prayer and celebration, a part of this Indian culture may not survive. [MG/HS level] (More insightful with the information added)

f. The tsunami struck at an Indian event when most of the citizens were attending. If many of the governing officials were in attendance for the celebration, there may be a loss of ability for much needed organization skills to help lead the people toward recovery efforts. Without officials to take charge in times like these, additional loss of survival resources may continue in 2038 because of the lack of trained leadership. [HS level] (Relevant research added)

PERHAPS – (1) Challenge is ambiguous; true intent cannot be determined, or (2) Challenge is worded poorly and would have been scored Yes had it been stated more clearly. Examples from the Natural Disaster Future Scene:

a. People may not want to donate money to the relief effort in southern Asia. (This has some possibility of occurring, but not enough detail is given to see the clear intent within the FS.)

b. People may continue to suffer from post-traumatic stress syndrome (PTSD). (Not a clear cause and effect relationship. With more information about what the challenge would be for the recovering area of India affected by the tsunami, it would be a Yes.)

WHY – (1) Challenge does not appear to have a clear connection to the Future Scene or (2) Challenge merely restates a fact from the Future Scene. Examples from the Natural Disaster Future Scene:

a. Fights may happen among the people of the affected areas. (Statement does not identify a challenge.)

b. The beauty of the region in southern Asia may be damaged. (Does not explain “WHY” and lacks supporting detail. Does not identify a clear cause/effect relationship.)
**SOLUTION** – A response that suggests how to solve challenges of the Future Scene. Identifying issues that might result from a solution to the Future Scene is not the same as identifying actual challenges in the Future Scene. Citing challenges resulting from a solution without defining the challenge or indicating why it is a challenge causing the Future Scene or resulting from it is an elaboration of how to implement the solution. Example from the Natural Disaster Future Scene:

a. The UN could provide cell phone towers and cell phones so that people in these regions could SKYPE or Facetime with their loved ones. (This is a solution.)

b. The UN could sue the people working for the charities who mismanaged the funds so that the money could be recouped and used for the victims of the tsunami. (A solution created from a concern in the Future Scene.)

**DUPLICATE** – Any challenge that is too contextually similar to another challenge previously scored as Yes cannot receive additional credit. Evaluators should not confuse duplicate ideas with duplicate categories—it is acceptable for students to list several different ideas in the same category. Three examples of duplicated challenges from the Natural Disaster Future Scene:

1. Since the entire area in southern Asia has suffered from the effects of the 9.9 magnitude earthquake, a sense of disorientation may result for the survivors. As time proceeds into months and years following the disaster, the lack of housing with adequate sanitation may add to the primitive living conditions. This may result in depression.

2. Since funds for essential needs have been lost through mismanaged charities, citizens in the areas who have suffered through the aftereffects of the tsunami may become more deeply removed from the events going on in their lives as well as the lives around them. This may cause severe depression that may be impossible to overcome as time moves forward.

3. Many of these citizens may not be able to focus on things that are essential to survive and prosper. This may cause a lack of connection to their lives today and result in an inability to advance beyond their current stage of depression.

**NOTE:** When scoring Perhaps, Why, or Solutions, NO credit for Fluency is awarded. Only 1 of the duplicated challenges will receive credit for Fluency.

---

**Awarding the Fluency Score**

- Mark each challenge statement as Y — Yes, P — Perhaps, W — Why, S — Solution, or D — Duplicate in the appropriate column of the score sheet.
- Count and record the number of Yes Challenges.
- Circle the Fluency score on the score sheet based on the scale provided.
- Record the Fluency score in the Step 1 score box.

**FLEXIBILITY (1-8)** measures the variety of viewpoints taken in the “Yes” challenge ideas. The numerical score is based upon the number of categories used in the challenges scored as Yes. ONLY YES challenges may be considered when scoring Flexibility. A more varied approach to the Future Scene allows a more complete picture of the whole situation. Evaluators take each of the following areas into consideration in scoring booklets for flexibility:

- Evaluators categorize the Yes challenge responses, using the categories listed on the score sheet.
- Some challenges can be categorized in more than one way. Evaluators are encouraged to assign a category that has not yet been awarded.
- Challenges may receive multiple categories if appropriate.
**CLARITY (1-8)** Clarity measures the overall quality of the writing and the cause-effect reasoning in the challenges. Challenges with clear and thorough descriptions of the concern demonstrate good clarity. Challenges lacking clarity are more often scored as *Perhaps* or *Why*. Students who consistently state *what* the challenge is, *why* it is a challenge, and *how* it logically relates to the Future Scene should receive a high score for Clarity.

**Awarding the Clarity Score**
- Consider the Clarity of the Challenges as a whole
- Circle the Clarity score on the score sheet based on the scale provided.
- Record the Clarity score in the Step 1 score box.

**ORIGINALITY (1 point for each)** – Originality rewards YES Challenges that are especially insightful, highly creative, and/or unique. A response found infrequently at that age/grade level and considered to be of high quality is scored Original.

**Awarding the Originality Score**
- Mark Original (a check mark or 0) in the O column for each YES challenge judged original.
- Record the total number of Originals in the Step 1 score box.

**Step 1: – Evaluation Issues for Challenges REVIEW**

<table>
<thead>
<tr>
<th>Challenges written without answering <em>what</em>, <em>why</em>, or <em>how</em> do not meet the requirements to be scored as a Yes.</th>
<th>Example of a Challenge without answering WHAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example of Challenge without answering WHY</td>
<td></td>
</tr>
<tr>
<td>Example of Challenge without answering HOW</td>
<td></td>
</tr>
</tbody>
</table>

**REVIEW for Step 1 Scores**
- **Fluency:** Totals for Yes, Perhaps, Why, Duplicate and Solutions
- **Flexibility:** Unique number of categories used for Yes Challenges
- **Clarity:** Considers the quality of the students’ writing
- **Originality:** Bonus point/s for unique Challenge/s that score Yes

**Notes about requirements for Step 1 Challenges**
- Challenges must be relevant to the current competitive Future Scene.
- A well-written Challenge will answer 3 required questions, what, why and how.
- Challenges will be written as a statement using a form of probability such as may, might or could.
- Challenges must be clearly written and have a strong connection to the Future Scene.
STEP 2 – SELECT an UNDERLYING PROBLEM (UP)

OBJECTIVE: To identify and state an important part of the Future Scene to address

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</thead>
<tbody>
<tr>
<td>Condition Phrase</td>
<td>0 1 2</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Stem</td>
<td>0 1 2 3</td>
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<td></td>
</tr>
<tr>
<td>Key Verb Phrase (KVP)</td>
<td>0 1 2 3</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Purpose</td>
<td>0 1 2 3</td>
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<tr>
<td>Future Scene Parameters (FSP)</td>
<td>0 1 2 3</td>
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<tr>
<td>Focus</td>
<td>1 2 3 4 5 6</td>
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<tr>
<td>Adequacy</td>
<td>1 2 3 4 5 6</td>
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</tbody>
</table>

NO WORK ATTEMPTED ........................................0

Content: The Underlying Problem (UP) is the most important step in the problem solving process. An Underlying Problem identifies a goal based on one Challenge, one category of concern, or a compilation of several related Challenges the students identified in Step 1 and plans to solve in Step 3. An excellent Underlying Problem has a narrowed focus, addresses a significant issue from the Future Scene through the Key Verb Phrase (KVP), and identifies a positive outcome through the Purpose (P) of accomplishing the KVP. The Underlying Problem is never a restatement of the entire Future Scene, nor is it a repeat of the Future Scene charge; it should be narrow enough to focus attention on a defined area of concern and open enough to generate many different solution ideas.

Structure: A well-structured UP is one that includes five required elements:
1. Condition Phrase (CP)
2. Stem (S)
3. Key Verb Phrase (KVP)
4. Purpose (P)
5. Future Scene Parameters (FSP)
6. 

Underlying Problem (UP)

Since the southern Asian area was impacted by a 9.9 magnitude earthquake leading to the tsunami that left millions homeless and hungry two years after the natural disaster occurred, how might we increase the recovery methods implemented for this area, so that sustainable living conditions prevail in 2038 and beyond?

Since the southern Asian area was impacted by a 9.9 magnitude earthquake leading to the tsunami that left millions homeless and hungry two years after the natural disaster occurred, (Condition Phrase) how might we (Stem) increase the recovery methods implemented for this area, (Key Verb Phrase) so that sustainable living conditions prevail in 2038 and beyond? (Purpose) FS Parameters include: Topic: tsunami or natural disaster 2. Time: 2038 and 3. Place: southern Asian area

UP with elements of the UP identified. This UP is MIDDLE GRADES and HIGH SCHOOL level quality.

CONDITION PHRASE (0, 1 or 2 points) — The Condition Phrase (CP) is a lead-in phrase or sentence, fact or logical extension, or research related to the Future Scene, that describes the situation in the Future Scene and is the basis for or cause of the Challenge the team chooses as the focus of its UP. See example inside the box. A Condition Phrase which is not a fact or does not use accurate information from the Future Scene such as, Since the world’s focus is on the recovery from the 2036 tsunami, will score lower in structure of this element of the UP. The CP should not be an entire challenge rewritten from Step 1. The CP guides students to make a connection to the Future Scene when selecting the issue for the Key Verb Phrase and the Step 1 Challenge(s) used as the focus of its UP. The CP may explicitly or implicitly refer to one challenge or group of challenges, but is not itself a challenge. The connection to southern Asia and the millions who died are mentioned in the Future Scene which is an area of concern from the Step 1 challenge(s) and is selected as the focus of the UP.

Condition Phrase
Since the southern Asian area was impacted by a 9.9 magnitude earthquake leading to the tsunami that left millions homeless and hungry two years after the natural disaster occurred...
**Awarding the Condition Phrase Score**
- **2 points**: The CP relates to the KVP and uses accurate information from the Future Scene, and/or from research related to the Future Scene, or is phrased to be a logical extension related to the Future Scene.
- **1 point**: The CP does not use accurate information from the Future Scene, is NOT a logical extension, or is not related to the KVP.
- **0 points**: The CP is missing.

**STEM (0 or 1 point)** The UP includes a Stem (“How might we” or “In what ways might”) we to format the Underlying Problem question.

**Awarding the Stem Score**
- **1 point**: The Stem is present
- **0 points**: The Stem is missing or inappropriate (e.g., How can we do...? Or How might the Future Problem Solvers...?)

**KEY VERB PHRASE (0, 1, 2 or 3 points)** — The Key Verb Phrase (KVP) is a phrase indicating the students’ primary action that addresses the issue in the Future Scene. The KVP is ONE single action verb or verb phrase with ONE object or ONE modifier in a phrase that mandates what must occur in Step 3. All Solution ideas in Step 3 must address the action goal of the KVP. When a team writes a KVP with multiple verbs, or multiple modifiers or objects to the verb, it will be more difficult to generate relevant solutions in Step 3 and therefore is inappropriate to use.

**Awarding the Key Verb Phrase Score**
- **3 points**: The KVP is present and contains a single action verb or verb phrase
- **2 points**: The KVP is present but has two objects or two modifiers
- **1 point**: The KVP is present but has two or more verbs or verb phrases
- **0 points**: The KVP is missing

**PURPOSE (0, 1, 2, or 3 points)** The Purpose (P) specifies an optimal direction, goal to pursue, or outcome of the Key Verb Phrase. (e.g., “so that sustainable living conditions prevail in 2038 and beyond?”) The Purpose is singular and should give further information about a desired result that should flow from accomplishing the action goal, and it is not a repetition of the Condition Phrase or the Key Verb Phrase. The Purpose usually begins with “so,” “so that,” or “in order to.” When a team writes a Purpose with multiple verbs or infinitive phrases or multiple modifiers or objects to that verb, it will be more difficult to generate relevant solutions in Step 3 and therefore is inappropriate to use. If the team does not include a written Purpose in the UP, this is a critical error and will be discussed later in the manual.

**Awarding the Purpose Score**
- **3 points**: The Purpose is present and has a single focus with a logical relationship to the KVP
- **2 points**: The Purpose is present but has multiple objects or modifiers
- **1 point**: The Purpose is present but has more than one verb or infinitive phrase, or present but no clear relationship to the KVP, or it repeats the KVP and/or CP
- **0 points**: The Purpose is missing or was imposed

**Note**: A UP with a missing Purpose is a Critical Error in the FPS process and will negatively affect scores in Steps 2, 3, 4, and 6. In Step 2 on the Structure line of the scoresheet, assign zero (0) points for the Purpose if it is missing. This and other critical errors will be explained in more detail later in this manual.
**FUTURE SCENE PARAMETERS (0, 1, 2, or 3 points)** The Future Scene Parameters (FSP) place the UP within the confines of the Future Scene. These parameters include **topic** (major focus of Future Scene), **place** (geographic location), and **time** (date from Future Scene, reasonable related dates, or logical time phrases). The topic parameter can be either the listed topic subject (i.e., Natural Disaster) or the more focused topic presented in the Future Scene such as natural disaster recovery following the tsunami.

The location parameter may not always be a specific geographic location (i.e., the Internet). Phrasing that indicates a time beyond that mentioned in the Future Scene is also an acceptable means of identifying time parameters in place of a specific year (i.e., the era following the tsunami of 2036). However, the phrase **“now and beyond”** is not indicative of the time parameter and would not receive credit.

**AWARDING THE FUTURE SCENE PARAMETERS SCORE**

- **3 points**: All three parameters of **Topic**, **Place**, and **Time** are present
- **2 points**: Two of the parameters are present
- **1 point**: One of the parameters is present
- **0 points**: None of the parameters are present

**FOCUS and ADEQUACY** measure the **quality** of the Underlying Problem (UP). The students should select a UP that identifies a manageable area of concern which has significant importance to the Future Scene and its charge. Word choice is vital when considering the written UP, which will impact the scores. If a UP with either a multiple KVP or Purpose exists in a booklet, evaluators refer to the guidelines when scoring Focus and Adequacy in Step 2 based on the structure and/or its quality. A UP written with a KVP and Purpose that address the topic, charge, or Future Scene in a very general way will be viewed as a critical error and should score very low in Focus and Adequacy. See Critical error notes.

**FOCUS (1—6)** looks at the **scope** of an Underlying Problem and whether it is too broad or too narrow. The issue/concern identified in the UP should be a smaller part of the entire Future Scene. It should narrow the Future Scene without trivializing any part of it. A focused UP is one that identifies a manageable area of concern in which solution ideas can be derived from one Challenge or cluster of Challenges generated in Step 1 from the Future Scene. Full credit is awarded to an UP that identifies a significant area of concern. If the Focus score is lower, then the Impact score in Step 6 will also be low. A multiple KVP or Purpose will result in a Focus score of 1, but is not one of the five (5) Critical Errors.

**AWARDING THE FOCUS SCORE**

- Use the descriptors to evaluate the Focus of the Underlying Problem.
- Determine the numerical score.
- Record the Focus score in the Step 2 score box as listed below.
- **6 points**: UP is excellent and the KVP is tied to the Purpose; addresses Future Scene charge
- **4—5 points**: KVP and goal are evident and manageable; addresses the Future Scene charge
- **2—3 points**: UP is too extensive or too narrow or not clearly worded
- **1—2 points**: UP is not derived from the Challenges generated in Step 1
- **1 point**: Restates, is Circular (Purpose repeats KVP &/or CP), or Broadens the Future Scene, uses an Absolute KVP, is Without a Purpose, uses a multiple KVP or P, uses a Purpose NOT connected to KVP, or ignores the Future Scene.

---

**Future Scene Parameters**

Since the **southern Asian** area was impacted by a 9.9 magnitude earthquake leading to the tsunami that left millions homeless and hungry two years after the **natural disaster** occurred, how might we increase the recovery methods implemented for this area, so that sustainable living conditions prevail in **2038 and beyond?**

**FSP (Acceptable Parameters for Future Scene on page 5)**

**Topic** – Natural Disaster; tsunami  
**Place** – southern Asia, India, Sri Lanka, Bangladesh, Burma, Malaysia, Thailand, area affected by the 2036 tsunami  
**Time** – 2038, era following the tsunami in southern Asia, 2 years following the tsunami in southern Asia, a date beyond 2038
ADEQUACY (1–6) assesses the **significance** and merit of the UP and the impact on the Future Scene. Higher adequacy scores are awarded to students that identify a major, important issue in the Future Scene, rather than a Future Scene fact, a non-challenge, the whole Future Scene, or something outside the Future Scene. If there is a multiple KVP or Purpose, only the first one is considered when scoring Adequacy.

### Awarding the Adequacy Score

- Use the descriptors to evaluate the Adequacy of the Underlying Problem.
- Determine the numerical score.
- Indicate the Adequacy score in the Step 2 score box as listed below.

  - **6 points**: team identifies an important/major issue within the Future Scene; & UP that addresses the FS Charge.
  - **4-5 points**: team identifies an appropriate issue within Future Scene & UP addressed the Future Scene Charge.
  - **2-3 points**: team selects a minor issue within the Future Scene.
  - **1 point**: UP Restates, is Circular (Purpose repeats KVP &/or CP), or Broadens the Future Scene, uses an Absolute KVP, is Without a Purpose, uses a trivial or Unrelated issue to the Future Scene, or is without a CP.

**NOTE** **CRITICAL ERRORS**: The Underlying Problem addresses a significant issue from the Future Scene and narrows the Future Scene. There are some errors that are deemed critical which affect the successful completion of the FPS process and must be identified by evaluators because of their negative impact upon the booklet scores in Steps 2, 3, 4, and 6. The following table presents the five Critical Errors in the FPS process and examples can be viewed in the Underlying Problem chart beginning on page 16.

### 5 CRITICAL ERRORS

**Steps 2, 3, 4, 6 will be impacted if the UP is a Critical Error**

- **RESTATEMENT**: A Restatement in the UP is a summary of the entire Future Scene, a revision of the intent of the charge that *does not narrow the topic*, or a generalization of the Topic. Words from the Future Scene charge can be used in the UP, but if the charge is very general the resulting Key Verb Phrase could be a restatement. Without narrowing the Future Scene students not only misunderstand the FPS process, but also do not understand the mandated scores in the subsequent Steps of the booklet.

- **CIRCULAR**: A Circular UP occurs when the **Purpose** is repeated in either the CP and/or KVP. This repetition may be contextually the same (verbatim) or a paraphrase carrying the same meaning. Underlying Problems such as these circumvent the cause/effect relationship necessary for the FPS process.

- **ABSOLUTE VERB**: Absolute verbs are restrictive mandates that lack flexibility and limit the creation of varied solutions. Solutions will *either solve the UP or not at all*. The use of an absolute verb such as *stop, prevent, eliminate*, etc., in the Underlying Problem will narrow the focus of the UP and cause difficulty for the students to develop solutions in Step 3.

- **NO PURPOSE**: A UP with No Purpose occurs when the students fail to include a written Purpose. This error causes the team to lack a stated goal to pursue or direction to take as they approach the major challenge or area of concern identified from the specific competitive Future Scene. An Imposed Purpose is one the evaluator writes inside brackets [ ] to assess the solutions against the Future Scene Parameters and Charge.

- **UNRELATED TO, BROADENS or IGNORES THE FUTURE SCENE**: A UP that ignores the facts of the Future Scene, perhaps concentrating on some aspect of research of the topic and moves outside the parameters of the Future Scene.

---

### Is it an Absolute Verb or Not?

**NOTE**: As an evaluator, sometimes it is difficult to determine if the mandating verb is absolute. If the KVP *"protect against the natural disaster"* is written in the Underlying Problem, the first objective is to identify if there is flexibility or degrees to which the mandating verb can be accomplished. In this case, there is flexibility, but it may be more limiting in scope than another verb choice. Some examples of solutions the team identified to protect against the natural disaster might include: emergency warning, organization of humanitarian organizations, and many, many more. In this case “protect” would NOT be considered “absolute.” If the KVP was stated “stop the mismanagement of donated funds for humanitarian purposes,” the flexibility for this verb is not the same. “Stop” is absolute. This verb MUST be viewed as either the solutions will *or* will not stop the mismanagement.
**Underlying Problem Example:**

*Since the southern Asian area was impacted by a 9.9 magnitude earthquake leading to the tsunami that left millions homeless and hungry two years after the natural disaster occurred, how might we increase the recovery methods implemented for this area, so that sustainable living conditions prevail in 2038 and beyond?*

**Step 2 – Evaluation Issues for Underlying Problems**

<table>
<thead>
<tr>
<th>KVP – multiple verbs or verb phrases OR multiple objects/modifiers of the verb</th>
<th>Examples of multiple objects of the verb</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• ...increase the recovery methods and distribution of needed items for the victims... (multiple objects used: recovery and distribution) <strong>Award 2 points</strong></td>
</tr>
<tr>
<td></td>
<td>• ... improve environmental and personal survival ... (multiple modifiers: environmental and personal) <strong>Award 2 points</strong></td>
</tr>
<tr>
<td><strong>Examples of multiple verbs/verb phrases</strong></td>
<td>• ... increase the recovery methods and improve the basic needs of the victims ... (multiple verbs used; increase and improve) <strong>Award 1 point</strong></td>
</tr>
</tbody>
</table>

**Notes on multiple verbs/verb phrases and multiple objects:**

- A KVP should contain a single verb or verb phrase with a single object.
- Words like **and, or, and while** in the Key Verb Phrase cause multiple verbs, multiple objects or multiple objects/modifiers.
- Points will be reduced for the KVP in each of these cases.
- The Focus score will be one (1), and evaluators will use only the first verb/verb phrase or object when scoring for Adequacy.
- To be scored as Relevant in Step 3, solution ideas must address everything mentioned in the KVP.

<table>
<thead>
<tr>
<th>Purpose with multiple verbs, verb phrases, OR multiple objects/modifiers.</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The following examples are written with commonly used lead-in phrases to help identify the beginning of the Purpose. Lead-ins following the KVP include, but are NOT limited to the phrases <strong>“so”, “so that” or “in order to.”</strong></td>
</tr>
<tr>
<td></td>
<td>• ... in order to assist the present and future victims of natural disasters? (multiple modifiers describing the type of victims in the Purpose) <strong>Award 2 points</strong></td>
</tr>
<tr>
<td></td>
<td>• ... so charities can safely provide needed supplies and vital housing for the affected residents of southern Asia? (Multiple objects used: supplies and housing) <strong>Award 2 point</strong></td>
</tr>
<tr>
<td></td>
<td>• ... so that improvements can be completed for the survivors’ of the tsunami disaster while the UN continues to seek international donations to support the cause? for multiple verbs in the Purpose (using “while” causes two simultaneous actions/situations to occur and will be viewed as multiple verbs resulting in one (1) point) <strong>Award 1 point</strong></td>
</tr>
<tr>
<td></td>
<td>• ... so the survivors can be identified and are assisted in the relief efforts? multiple verbs used: can be identified and are assisted) <strong>Award 1 point</strong></td>
</tr>
</tbody>
</table>

**Notes on multiple verbs/verb phrases and multiple objects or not connected to the UP:**

- The UP will score 1 in Focus.
- Evaluators will refer only to the first verb/verb phrase or object/modifier when scoring Adequacy.
- Solution ideas must support both verbs or objects/modifiers to receive Relevant scores in Step 3.
### Critical Errors

**Mandatory Scores in Steps 2, 3, 6**

Steps 4 and Overall may also be affected

*In competitive situations such as the District, Region or State Final a booklet with one of the Critical Errors in the Underlying Problem has a very hard time advancing to top rounds of evaluation.*

- Score of 1 for Focus and a score of 1 for Adequacy in Step 2.
- 25% Rule in effect for the number of possible 16 written solutions for MG/HS or possible 8 written solutions for EL scored as Relevant. (Maximum of 4 for MG/HS and maximum of 2 for EL levels)
- The Future Scene Parameters of topic, place, and time must be considered when scoring Step 3

**ADDITIONAL EXPLANATIONS WILL BE GIVEN LATER FOR THE FOLLOWING POINTS OF EMPHASIS**

- Scores are 1 in Step 6 for Relevance, Effectiveness and Impact
- For a written UP without a Purpose, NO credit can be received in Step 4 for Specificity to the Purpose.
- Overall (Creative Strength) may also be affected.

#### CRITICAL ERROR – Restatement of KVP and Purpose of the Competitive Future Scene

<table>
<thead>
<tr>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>... How might we overcome the challenges resulting from the natural disaster ...? <em>(Restatement of topic)</em>—Other phrasing for the KVP instead of &quot;overcome&quot; may include &quot;develop remedies for&quot; or &quot;lessen.&quot; so that their lives can be restored <em>(Repeat of the charge)</em></td>
</tr>
<tr>
<td>In what ways might we focus on the issues for the people in southern Asia ... <em>(Restatement of Future Scene)</em> in order to make their lives better following the disaster. <em>(The KVP and the Purpose combined make this a restatement of the Future Scene.)</em></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Restatement is a KVP and Purpose that addresses the entire Future Scene in a very general way and is a critical error in the creative problem solving process. The KVP should be a narrowing of the entire Future Scene to one area of concern. Words from the Future Scene charge can be used in the UP, but if the charge is very broad the resulting Key Verb Phrase could be a restatement.</td>
</tr>
<tr>
<td>CRITICAL ERROR –</td>
</tr>
<tr>
<td>------------------</td>
</tr>
<tr>
<td>KVP Absolute Verbs</td>
</tr>
<tr>
<td>CRITICAL ERROR –</td>
</tr>
<tr>
<td>Circular UP (Purpose is repeated in the Condition Phrase and/or the KVP)</td>
</tr>
<tr>
<td>CRITICAL ERROR—</td>
</tr>
<tr>
<td>UP unrelated to or ignores the Future Scene</td>
</tr>
<tr>
<td>Or broadens or goes beyond the facts stated in the Future Scene</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>CRITICAL ERROR –</td>
</tr>
<tr>
<td>No Purpose</td>
</tr>
</tbody>
</table>

**Note:** A UP that encompasses one of the critical errors is inconsistent with the FPS process. The team will have difficulty scoring high marks in the remainder of the booklet. Examples of critical errors will be included in the Underlying Problems chart beginning on page 16.
**Step 2: – Evaluation Issues for Underlying Problems REVIEW**

**UP is derived from challenge/s or one area of concern derived from the competitive Future Scene**

**REVIEW for Step 2 Scores**
- **Completeness:** The key to a well-written Up begins with 5 required elements are present and earns points (CP, Stem, KVP, P and FSP). This is the structural score.
- **Focus:** The scope of the UP is considered for points.
- **Adequacy:** Points are awarded based on the importance of the UP.

**Notes about requirements for Step 2 Underlying Problem**
- This is often called "the most important step" of the FPS process because every step of the booklet is completed based on the UP selected that sets the action to be taken and the purpose to be achieved.
- Each UP has scores based on its structure and the quality of the action (KVP) to be taken along with the goal (Purpose) to be achieved.
- The parameters of the Future Scene are important to narrow the focus from the general topic to the specific information presented by the author for consideration.

---

**NO Purpose Versus Imposed Purpose, What is the Difference?**

**NOTES:** Additional Scoring Information when the Purpose is omitted and one is imposed (written) by the evaluator. An imposed purpose is written by the evaluator to have consistency when scoring the solutions and AP. A logical purpose is written in brackets [ ] that includes any missing Future Scene Parameters and a connection to the Future Scene charge. The Imposed Purpose is written on the scoresheet by the evaluator for the team to have as an example of structure for a UP that contains all required elements. This is also a valuable tool for the evaluator to have available as each solution is scored for Relevance in Step 3.

Since the southern Asian area was impacted by a 9.9 magnitude earthquake leading to the tsunami that left millions homeless and hungry two years after the natural disaster occurred, how might we increase the recovery methods implemented for this area? [so that the people are better equipped to survive?] (Imposed Purpose is written in brackets by the evaluator that seems logical to the CP, KVP, Future Scene, Future Scene charge and Future Scene Parameters)

- **Assessing Step 3 score with an Imposed Purpose:** Solution ideas in Step 3 are scored for Relevance very strictly against the KVP, the Imposed Purpose, the Future Scene Parameters and the charge. The restrictions in Step 3 are severe. The limitation on the number of solutions an evaluator may allow for credit toward the Relevance score is up to 25% of the 16 total possible solution ideas in HS & MG divisions and 8 possible solutions ideas in the EL division with a maximum of 4 for HS and MG and 2 for EL Divisions. **NO points are given for Elaboration for any UP originally written without a Purpose.** If the CP and the KVP do not have a logical connection, it will be difficult to award credit for solutions in Step 3.

  *Special notes when considering the Future Scene Parameters:* Evaluators will be charged to score all solutions against the Future Scene Parameters (topic, time and place) as written in the Future Scene if they are not the same as written in the UP.

- **Assessing Step 4 score with No Purpose or Imposed Purpose:** In Step 4, NO criterion may receive credit for being SPECIFIC to the PURPOSE if an Imposed Purpose is written by the evaluator.

- **Assessing Step 6 score with Imposed Purpose:** The Relevance, Effectiveness and Impact scores will be one (1). Creativity score in Overall may also be lower.
**Step 3 – Produce Solution Ideas**

**Objective:** To generate 16 varied and unique solution ideas (8 for Elementary) written in statement form that respond to the Underlying Problem.

<table>
<thead>
<tr>
<th>Fluency</th>
<th>Elaboration</th>
<th>Flexibility</th>
<th>Originality</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6 7 8</td>
<td>1 2 3 4 5 6 7 8</td>
<td>1 2 3 4 5 6 7 8</td>
<td>1 x ___ = ___</td>
</tr>
</tbody>
</table>

**Content:** A solution idea, if relevant, addresses the Key Verb Phrase and supports the Purpose, either explicitly or implicitly. It does not contradict the Future Scene parameters of topic, place, and time or Future Scene charge. Flexibility in thinking is demonstrated by suggesting ideas from different perspectives or categories.

**Structure:** Well-written solutions follow these guidelines:
1. Solutions are written in statement form. Questions are inappropriate for this step.
2. Solutions have to be directed to the UP and have an impact on the Future Scene charge.
3. Solutions are stated in *definitive* terms of not possibility, using absolute terms such as will. Using non-absolute statements with terms such as may, might or could, instead of will deny an important element of the FPS process. Solutions are stated to take on the action in the UP and will indicate what will happen to solve the problem. Solution consistently using probability statements (may, might, or could instead of will) can only receive credit for a maximum of three (3) solutions.
4. A Relevant solution will give will give information about what the solution is and indicates how it solves or impacts the UP. An Elaborated Relevant Solution will include either who will carry out the solution and/or why the action is to be completed.
5. If and ONLY if no work has been attempted in this section, a score of zero (0) will be awarded.

**Fluency (1-8)** – Fluency measures the quantity of relevant solution ideas that are relevant to the UP. Each solution must be designated as one of the following: Relevant, Perhaps, Why, or Duplicate.

**Relevant:** The solution idea addresses, or has a relationship to, the Key Verb Phrase and it is clear or easily inferred that it supports the Purpose. In addition, it does not contradict the Future Scene Parameters, Topic Place and Time, or the Future Scene Charge. If implemented, the solution idea will achieve the goal of the UP.

- A solution idea does not have to completely solve the Underlying Problem, but it must show a relationship to the UP.
- The Condition, Key Verb Phrase, and/or Purpose do not have to be repeated for a solution to be Relevant.
- The connection to the KVP does not have to be explicitly stated, as long as the required action is clearly impacted by the solution idea. If multiple verbs, verb phrases or objects/modifiers are stated in the KVP, the evaluator MUST consider *ALL* aspects of the KVP when scoring for Relevant solution ideas in Step 3.
- The connection to the Purpose does not have to be explicitly stated, as long as the Purpose is clearly impacted by the solution idea. If more than one Purpose is stated, the evaluator MUST consider *ALL* aspects of the Purpose when scoring for Relevant solution ideas in Step 3.
- A Relevant solution does not have to work perfectly, be humane, be cost effective, be tried and true, or be new. These aspects are judged in Step 6 - Action Plan.
- Imaginative inventions are fun, but inventions don’t necessarily happen just because someone says it will. Sometimes inventions are “magical thinking” or in opposition to the laws of nature. Some level of explanation about how the invention will work may be needed to award a Relevant.
- Solutions are stated as absolute statement using the term “will”. Terms such as may, might, could, deny an important element of the FPS process when writing solutions. Solutions consistently using probability (“may, might, or could” instead of will) can only receive credit for a maximum of three (3) solutions.
- A Relevant solution idea does not have to be elaborated. The focus of fluency is on the ideas, not the sophistication or elaboration of the writing.
Underlying Problem (UP)

Since the southern Asian area was impacted by a 9.9 magnitude earthquake leading to the tsunami that left millions homeless and hungry two years after the natural disaster occurred, how might we increase the recovery methods implemented for this area, so that sustainable living conditions prevail in 2038 and beyond?

These are examples of Relevant (R) solution ideas and earn credit toward Fluency score.

<table>
<thead>
<tr>
<th>Idea</th>
<th>Relevant (R) or Not (N)</th>
<th>Why or How</th>
<th>MG/HS Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. The UN and other groups like Habitat for Humanity can organize the volunteers and local people to send building supplies and take turns working on the houses so that people WILL have homes to live in.</td>
<td>[EL level]</td>
<td>(Appropriate thinking for age of students.)</td>
<td></td>
</tr>
<tr>
<td>b. Big communication companies will send workers to the affected areas to restore phone service so people who have lost family members in the disaster can get in touch with other relatives or friends that may have survived.</td>
<td>[EL/MG level]</td>
<td>(Restoring contact with family and friends is critical to help people transition from tragedy to survival.)</td>
<td></td>
</tr>
<tr>
<td>c. For some unaffected coastal areas located in southern Asia, emergency planning will be offered in local communities with governmental officials. In the time when natural disasters occur, communities with emergency plans that have been discussed during organizational meetings that involve community response teams and business leaders are more successful in providing support to the victims of the disaster. These plans can be extended to provide the additional support to areas like southern Asia for multiple years following the disaster if necessary.</td>
<td>[MG/HS level]</td>
<td>(Provided insight for the solution through research.)</td>
<td></td>
</tr>
<tr>
<td>d. Since there has been concern that money specifically designated for the southern Asia recovery efforts following the 2036 earthquake has been mismanaged, any future funds will be under the watchful control of two trusted entities such as the World Bank and World Red Cross. This structure will cause a “checks and balance” of relief funds generated to provide financial compensation to areas in desperate need of help.</td>
<td>[MG/HS level]</td>
<td>(Addresses the UP and an important issue from the Future Scene.)</td>
<td></td>
</tr>
<tr>
<td>e. To alleviate the detrimental effects the tsunami has had on the people of southern Asia, the governments of the surrounding nations will organize humanitarian groups to contribute to the affected regions through the Adopt-a-Disaster-Area program. The organization will target specific communities affected by disaster and provide a path to infrastructure revitalization with monetary contributions and the mentoring program will promote productive community sustainability that enables them to thrive in 2038 and beyond.</td>
<td>[MG/HS level]</td>
<td>(Addresses the UP and an important issue from the Future Scene.)</td>
<td></td>
</tr>
<tr>
<td>f. With the need to focus on the existing emotional and mental needs in the area of the victims as soon as possible, the World Health Organization (WHO) will form a network of first responders with psychology or psychiatric degrees who are experts in the field of disaster recovery. The WHO will be a data storage center of experts who could be subsidized for travel and housing for 2-4 week periods of time from funds and any additional donations so that support can be started earlier in the recovery process and continue for as long as needed. These professionals will pre-arrange with their employers or other professionals who can cover their private practices so that this emergency leave can be taken and not interfere with patient care. WHO will arrange for short-term volunteers until full-time professionals can be secured. This will begin now to help those needing support and serve as a model for future recovery efforts.</td>
<td>[MG/HS level]</td>
<td>(Addresses the UP and an important issue from the Future Scene and the goal of the UP.)</td>
<td></td>
</tr>
</tbody>
</table>

PERHAPS: The solution idea does not have a clear connection to the Key Verb Phrase and Purpose of the Underlying Problem. More information may have helped to make the connection. The solution idea is worded poorly or ambiguous, and would have been scored Relevant had it been stated more clearly.

- The government will offer help to the people in the area. This is needed so that people see the government doing all that can be done. (What type of help?)
- The people in the affected areas will use different forms of art to relieve stress. (Can you get more detail to explain how the art to help with the stress in the area?)

HOW or WHY: The solution idea is marked How or Why because the solution idea is unrelated to the Underlying Problem, OR the statement does not identify a solution idea OR the idea is unclear.

- Forecasting will be upgraded to help with tsunami warnings. (How? Does not answer the question? How does this solve the KVP?)
- A concert will be held to increase funding available to the tsunami victims. (How? This solution needs support to see how it impacts the UP.)
**DUPLICATE:** A solution idea too contextually similar to one or more solutions previously scored as Relevant is considered a Duplicate. Each solution identified as a Duplicate could have been scored as an R toward Fluency. However, duplicated written solution ideas will receive credit for ONLY ONE (1) idea that is better written or gives the team the most credit for Elaboration and/or Flexibility. The remaining solution(s) receive(s) a "D" in the appropriate column on the score sheet and feedback with the number of the solution that received credit being duplicated. Evaluators should not confuse duplicated categories with duplicated ideas.

1. Government officials will partner with Habitat for Humanity to begin the Benjamin Franklin-Help Others, Help Yourself Recovery Program. Habitat for Humanity is known for requiring recipients of homes to participate in volunteer work for others’ homes as well as your own in order to receive your home at such a low price. By getting the people affected by the disaster to be the ones to rebuild, the citizens will become skilled in areas where they will help the community flourish.  **(Well-written, details included to solve UP on previous page)**

2. Citizens of the southern Asia region will be taught ways to rebuild their homes by a league of master carpenters and tradesmen. Through this education experience, people will become skilled so they can revitalize their community.  **(Contextually similar to #1—becoming skilled to rebuilding homes)**

3. In order to receive funding to rebuild the homes in the community, people who live in the affected regions will be required by the fundraising panel to work with neighbors in the area during reconstruction. This will provide on the job training for people to be taught methods of recovery from natural disasters through home-building experience. This will help sustain the community for the future.  **(Duplicate to #1 and 2)**

*In the above examples the evaluator awards credit for Relevant to solution number 1 ONLY, and marks solutions 2 and 3 as Duplicates to #1. Please note that duplicates are not usually written as sequential solutions in the booklet.*

---

**Awarding the Fluency Score**

- Mark each solution idea as **R** – RELEVANT, **H** – How, **P** – Perhaps, **W** – Why, or **D** – Duplicate in the appropriate column of the score sheet.
- Count and record the number of RELEVANT solutions.
- Circle the Fluency score on the score sheet based on the scale provided.
- Record the Fluency score in the Step 3 score box.

**NOTE:** Do not confuse duplicate solution ideas with duplicate categories. It is acceptable for students to list several solution ideas in the same category. For example, if the UP raises funds, then all solutions will raise funds and thus have the opportunity to be scored as Relevant. With that said, just changing the person or the organization to raise funds, or to have similar funding raising endeavors will result in duplicated ideas.

**NOTE for Step 3:** In circumstances where the UP is a Restatement; is Circular; or uses an Absolute Verb in the KVP; is Unrelated to, Broadens or Ignores the Future Scene; or was written by the team Without a Purpose, the team may receive credit for a maximum of 25% of the total (16 High School or Middle Grades or 8 Elementary) possible solutions (Maximum of 4 for HS and MG and 2 for EL Divisions). Please remember that scores must be assigned as whole numbers.

**NOTE:** Repeating the CP, KVP or P verbatim does not make a solution Relevant to the UP or Elaborated. Elaborated solutions must explain three of the four *what, how, who* and *why* questions. When and where may also be included but will not serve as a replacement for one of the four questions that can support awarding Elaboration.

**NOTE:** Award credit for Relevant solutions with NO Purpose if the solutions are written to show a logical connection between the CP, KVP and Future Scene charge. All solutions must be assessed against the Future Scene Parameters.  **(Credit MUST be given to at least one solution idea.)**
### Step 3 – Scoring Solution Ideas for UPs with KVP and/or Purpose Concerns

<table>
<thead>
<tr>
<th>KVP multiple verbs, verb phrases, or objects/modifiers</th>
<th>Examples of multiple objects of the verb in Step 2</th>
</tr>
</thead>
</table>
| Not Critical Error | ...increase the distribution of needed items and recovery methods for the victims... (multiple objects used: distribution and recovery) **Award 2 Points**  
Example of multiple verb/verb phrase  
... how might we increase volunteer numbers and improve living conditions...... (multiple verbs: increase and improve) **Award 1 Point** |

<table>
<thead>
<tr>
<th>Purpose multiple verbs, verb phrases, or objects/modifiers</th>
<th>Example</th>
</tr>
</thead>
</table>
| Not Critical Error | so charities can safely provide needed supplies and vital housing for the affected residents of southern Asia? (multiple objects used: needed supplies and vital housing ) **Award 2 Points**  
**Example of multiple verb/verb phrase**  
... so that victims can have secure housing and be able to seek jobs...(multiple verbs: can have and seek) **Award 1 Point** |

<table>
<thead>
<tr>
<th>UP is too extensive or too narrow</th>
<th>Example of UP that is too extensive</th>
</tr>
</thead>
</table>
| Not Critical Error | ...how might we educate the public about the tsunami in southern Asia, so that young children are more successful?  
**Example of UP that is too limiting**  
...in what ways might we increase participation in Red Cross so that people do not lose their jobs in the United states? |

<table>
<thead>
<tr>
<th>Scoring Solution Ideas for UPs unrelated to the Future Scene:</th>
<th></th>
</tr>
</thead>
</table>
| | Although the Solutions are responding to a UP that expand or limit the directive/charge, the Solutions will score as Relevant as there is a relationship to the UP, *so long as they do not contradict* the Future Scene and its charge.  
If the parameters were not included in the UP, or were changed, the Future Scene parameters of topic, place, and time are used for scoring Step 3. |

### Step 3 Critical Error Scoring Issues—25% Rule is Implemented

<table>
<thead>
<tr>
<th>Restatement</th>
<th>Examples</th>
</tr>
</thead>
</table>
| **CRITICAL ERROR** | ... How might we overcome the challenges resulting from the natural disaster ...?  
(*Restatement of topic*—Other phrasing for the KVP instead of "overcome“ may include "develop remedies for" or "lessen.“) so that their lives can be restored  
(*Repeat of the charge*)  
In what ways might we focus on the issues for the people in southern Asia following the tsunami ... (*Restatement of Future Scene*) in order to make their lives better following the disaster. (*The KVP and the Purpose combined make this a restatement of the Future Scene.*) |

<table>
<thead>
<tr>
<th>Scoring Solution Idea that is a Restatement:</th>
<th></th>
</tr>
</thead>
</table>
| | A Restatement makes it easier to generate solution ideas because the UP has not been narrowed to one specific problem or area of concern. To offset this critical error, the number of possible solutions is 25%.  
The Future Scene Parameters (FSP) must be considered when scoring a Restatement. |
### Absolute Verb

**CRITICAL ERROR**

### Examples

- Since organizations are involved when a tsunami strikes in an area of the world, how might we stop the mismanagement of donated funds for humanitarian purposes, so that the recovery of an affected area can be accomplished in a timely manner in 2038.

### Scoring Solution Ideas for absolute KVPs:

- Scoring for solutions with an absolute verb can allow for solution/s to be relevant. Because the team has selected an absolute verb in the KVP, the question becomes, "Does this solution solve the UP **ABSOLUTELY**?"
- If missing, the FSP must be considered for Relevance.

### Circular

**CRITICAL ERROR**

### Examples

Since the southern Asian area was impacted by a 9.9 magnitude earthquake that left millions seeking basic needs two years after the natural disaster occurred, how might we increase the recovery methods implemented for this area, so that basic needs can be meet for these victims 2038 and beyond?

### Scoring Solution Ideas when the KVP and Purpose are the same

- In a booklet where the UP's Purpose repeats the KVP and or CP, solutions will likely solve/address only one goal, as the Key Verb Phrase and Purpose are the same.

### No Purpose

**CRITICAL ERROR**

### Example Scoring Solution Ideas for UP without a Purpose:

Since the southern Asian area was impacted by a 9.9 magnitude earthquake leading to the tsunami that left millions homeless and hungry two year after the natural disaster occurred, how might we increase the recovery methods implemented for this are in 2039?

### The 25% Rule is applied to the written solutions.

See the Imposed Purpose requirements at the end of Step 2 for additional information.

### Unrelated to or Ignores or Broadens Future Scene

**CRITICAL ERROR**

### Scoring Solution Ideas for UPs Unrelated to, Ignores or Broadens the FS:

**Example of a broadened UP**

Since natural disasters occur throughout the globe, how might we help Americans adjust to the trauma people experience during a disaster so that a sustainable lifestyle us restored.

### Scoring Solution Ideas

- Although the solutions are responding to a UP that broadens the directive, the solutions will score as Relevant as there is a relationship to the KVP (see definition of relevant solution).
- If the parameters were not included in the UP, or were changed, the Future Scene parameters of topic, place, and time are used for scoring Step 3.
ELABORATION (1-8) measures the number of RELEVANT SOLUTION IDEAS that contain at least three significant areas of detail: who, what, why and how. Solution ideas elaborated by simply adding on the Key Verb Phrase and/or Purpose are not considered for Elaboration credit more than three times in a booklet.

- Evaluators should provide feedback that contains specific suggestions on ways to elaborate solution ideas.
- No credit will be awarded if a solution is a duplicate.
- Students do not have to write a lengthy paragraph in order to earn elaboration points, nor should they earn elaboration points just for writing a lengthy paragraph.

**Elements of Elaboration**

Here is an example of an elaborate (perhaps over elaborate, for the sake of illustration) solution idea utilizing who, what, how and why.

**Who:** The World Health Organization (WHO)

**What:** form a network of first responders with psychology or psychiatric degrees who are experts in the field of disaster recovery

**How:** data storage center of experts who could be subsidized for travel and housing for 2-4 week periods of time

**Why:** support can be started earlier in the recovery process and continue for as long as needed.

** OPTIONAL— Not counted toward Elaboration—**Where and When are not mandatory, but can provide important information.

**Where:** in the area of the victims

**When:** This will begin now to support those needing help and serve as a model for future recovery efforts.

**Awarding the Elaboration Score**

- Mark each Elaborated solution that qualifies in the column as elaborated with an “E” or check mark.
- If no credit is awarded for Elaboration, the space is left blank.
- No Elaboration credit can be awarded if the team did NOT write a Purpose in the booklet.
- Solutions written with an Imposed Purpose are also NOT eligible for consideration for Elaboration points.
- Count and record the number of solution ideas marked as elaborated in the appropriate column.
- Circle the Elaboration score on the score sheet based on the scale provided.
- Record the Elaboration score in the Step 3 score box.

FLEXIBILITY (1-8) measures the diversity of thought in variety of viewpoints taken in the Relevant solution ideas. ONLY Relevant solutions may be considered and scored for Flexibility. Students should demonstrate Flexibility in their thinking and generate solutions for the Underlying Problem from different perspectives or categories. Evaluators take each of the following areas into consideration in scoring solutions for Flexibility:

- Do not assign categories to solutions that do not receive credit for being Relevant to the UP.
- Evaluators categorize the Relevant solution idea responses, using the categories listed on the score sheet.
- Some solution ideas can be categorized in more than one way. Evaluators are encouraged to assign a category that has not yet been awarded.
- Challenges may receive multiple categories if appropriate.

**Category List**

<table>
<thead>
<tr>
<th>Category</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Arts &amp; Aesthetics</td>
<td>10 Government &amp; Politics</td>
</tr>
<tr>
<td>2 Basic Needs</td>
<td>11 Law &amp; Justice</td>
</tr>
<tr>
<td>3 Business &amp; Commerce</td>
<td>12 Miscellaneous</td>
</tr>
<tr>
<td>4 Communication</td>
<td>13 Physical Health</td>
</tr>
<tr>
<td>5 Defense</td>
<td>14 Psychological Health</td>
</tr>
<tr>
<td>6 Economics</td>
<td>15 Recreation</td>
</tr>
<tr>
<td>7 Education</td>
<td>16 Social Relationships</td>
</tr>
<tr>
<td>8 Environment</td>
<td>17 Technology</td>
</tr>
<tr>
<td>9 Ethics &amp; Religion</td>
<td>18 Transportation</td>
</tr>
</tbody>
</table>

**Must be scored as a Relevant Solution to be considered for Flexibility**
Awarding the Flexibility Score

- Mark the category/categories for each RELEVANT Solution ONLY.
- Count and record the number of DIFFERENT categories. Each category number may be counted toward Flexibility ONLY once.
- Circle the Flexibility score on the score sheet based on the scale provided.
- Record the Flexibility score in the Step 3 score box.

**ORIGINALITY (1 point for each)** rewards Relevant solution ideas that are especially insightful, highly creative, and/or unique. Original ideas may often include futuristc elements. An original solution is a response that is found infrequently among responses at that age/grade level and considered of high quality (insightful, indicative of breakthrough thinking). Wildly futuristic ideas are not always original. A relevant solution idea must have substance to receive Originality points. An invention can’t happen just because someone says it will.

**Awarding the Originality Score**

- Mark Original (a check mark or O) in the O column for each Relevant Solution idea judged original.
- Record the total number of Originals in the Step 3 score box.

**NOTE:** Only Relevant solutions may be considered and scored for Flexibility, Elaboration, and Originality.

**Step 3: – Evaluation Issues for Solutions REVIEW**

| Solutions written without answering what the solution is and how it solves the UP will not be scored as Relevant. |
| Notes about requirements for Step 3 Solutions |
| • Fluency: Totals for Solutions that are Relevant, Perhaps, Why, How or Duplicate |
| • Elaboration: Totals for Solutions that answer 3 of the 4 questions: What, How, Who and How |
| • Flexibility: Unique number of categories used for Relevant Solutions |
| • Originality: Bonus point/s for unique Solutions/s that score Relevant |
| • Solutions must be Relevant to the specific UP written. |
| • A well-written, elaborated Solution will answer 3 of 4 required questions to receive full credit, who, what, why and how. |
| • Solutions will be written as a statement using a form of absolute terms such as will. Probability terms (may, might or could) are not appropriate in this step. |
| • Solutions must be explained in enough detail to show the strong connection to how the solution will solve the UP. |
**STEP 4 – GENERATE and SELECT CRITERIA**

**Objective:** To determine 5 criteria that measure how well the solution ideas accomplish what the UP mandates.

Correctly Written .................................................................0 1 2 3 4 5
Relevant ......................................................................................0 1 2 3 4 5 6 7 8 9 10

**NO WORK ATTEMPTED ..........................................................0**

**Content:** Criteria are the standards by which solution ideas are judged. The solution idea that best meets all of the criteria is considered the “top ranking solution” and becomes the basis for the Action Plan; therefore, criteria should address aspects of the solution ideas that will be very important in determining which one will best accomplish the goals of the Underlying Problem. Generating well-written and applicable criteria will help to explain the relationship between Steps 4, 5 and 6. The team will be held accountable for writing and applying criteria that are important in choosing the top-ranking solution idea for a specific Underlying Problem and Future Scene.

**Structure:** A Correctly Written criterion is one that meets all four required guidelines. All must be present, or the criterion will be incorrectly written.

1. Focuses on a single dimension/standard (focuses on only one concern)
2. Demonstrates a measure of degree using a superlative (does not use “best” as a superlative)
3. Indicates the desired outcome or direction
4. Recognized as a question

**CORRECTLY WRITTEN (0-5)** – “Correctly written” is a matter of structure. At this point, the evaluator is not deciding the value of the criteria but assessing only the structure.

- Each criterion must deal with a single standard. The words **and, or, also** and **while** in a criterion indicate multiple standards and should be avoided. When using the phrase “in the year 2038 and beyond” the use of “and” is this example is acceptable and will not be scored as a multiple.
  - Tacking on the same full or partial CP, KVP or Purpose into multiple Correctly Written criteria creates a situation for ONLY one criterion with the same phase to be scored as specific: score 2 points.
  - If more than one criterion is written with the same phase from the UP that was scored as specific, any subsequent correctly written criteria can only receive a score for generic criteria: 1 point.
  - Adding any phrase with the words “so that” or “in order to” along with a superlative can often results in a multiple standard, that when read creates a “dual” criterion. In that case, award 0 for Correctly Written.

- Each criterion must include a superlative (longest, easiest, fewest, most, greatest, etc.), allowing the solution ideas to be ranked in Step 5.
  - Comparative words do not rate as “Correctly Written.” (These include better, longer, easier, fewer, more, greater, etc.)
    - The superlative **best** is not acceptable and also does not rate as “Correctly Written.”

- Each criterion must be stated so that the desired outcome is indicated. For example, “Which solution will be the most helpful for the victims,” not “Which solution will be the least helpful for the victims.” (each criterion will have a positive outcome i.e. least costly instead of most expensive)

- Each criterion must be **recognizable as a question**. As the evaluator, you must be able to see the question clearly to rank solutions from Step 3. Adding a question mark to a superlative does not meet this requirement. **EX.** *Longest?* The four (4) requirement elements are not present as written.

At this point, an evaluator is not deciding the value of the team’s criteria in ranking the solution ideas. Correctly written is a question of **structure of all 4 required elements being present.** A question mark not validate the required structural element as a criterion written as a recognizable question. Nor does is provide a desired direction.

**CORRECTLY WRITTEN**

- **Which solution will be the easiest to accomplish?**
- **WSW be most beneficial to the people in southern Asia as they recover from the tsunami?**
- **Is the most productive to clean up the post tsunami site in southern Asia**
- **Safest for the victims of the disaster**

**NOT CORRECTLY WRITTEN EXAMPLES**

- **Greatest?** Does not meet the 4 structural requirements to be Correctly Written
- **WSW be the most difficult to get approval?** Does not indicate a desired direction
NOTE: It is recommended that criteria be written in question format, beginning with the words “Which solution will (WSW)” and ending with a question mark; however, this is not required. The phrase “safest for the victims of the disaster” meets the requirement for Correctly Written, but should include WSW and a question mark for easier scoring. Including just a superlative (most, easiest, greatest) as a criterion without an intended function or target group will be scored as incorrectly written when the superlative cannot be measured. “Cheapest” is a superlative than CANNOT stand alone because it does not represent an ideal of being the least expensive for the victims, or the stakeholder that need for expense to be less than for others. This example does not provide a desired direction, nor does it guarantee a single dimension because is does not provide the element to be ranked.

### Awarding the Correctly Written Score

- If a criterion meets **ALL** four structural requirements, award 1 point for Correctly Written. Indicate with a check mark in CW column of the score sheet.
- If **ALL** four requirements are not met, NO point is given.
- Only one (if written correctly) of the criteria identified as a duplicate may be scored as Correctly Written.
- Verify the number of Correctly Written criteria for Step 4.
- Record that number in the Steps 4-5 score box.
  - **1 point:** Each criterion has a single dimension, uses a superlative, is in a desired direction and recognizable as a question.
  - **0 points:** Criterion does not meet all four requirements or is a duplicate

### RELEVANCE (0-10)

assesses the specificity of the criteria content. Criteria that are generic and can be applied to a wide variety of topics and situations are scored as generic. Criteria that are specific to relevant research, elements of the Underlying Problem, and Future Scene for this topic are considered for specificity. Criteria will be identified in one of the three distinct areas.

1. **Not Relevant** – No relationship to the CP, UP, KVP, Purpose, Population (Stakeholders) or Future Scene is evident, OR is a Duplicated criterion (Give credit to the better of the duplicates). **Which solution will be the most critical to protecting the animals around the world?** (What connection does this have to the Future Scene about Natural Disasters?)

2. **Generic** – These criteria are relevant in measuring concerns to almost any problem. They include generic measures of cost, public acceptance, resources, time for implementation, etc. **WSW be easiest for the community to implement with a natural disaster?** (This criterion could be used for any Future Scene, UP or competitive topic. Please note that simply adding one of the Future Scene Parameters does not receive credit for being Specific.

3. **Specific** – This criterion is specific to the CP, KVP, P, Population (Stakeholders within the Future Scene), or shows significance to a related issue of the Future Scene Process with association to the of the UP. **Which solution will target the most sustainable living conditions for tsunami victims as they overcome this tragic event in their lives?** Because they are more specific, they show greater insight into the UP and are more effective in delineating the solution idea to be used for the Action Plan in Step 6. See examples at the bottom of the page. A criterion may be scored as Specific to the CP, KVP, P and Population ONLY once. Process may be used more than once when judging a Specific criterion.

#### All criteria are read and scored for Relevance, even if they were not correctly written.

- For criteria with multiple standards (thus not correctly written), use only the first standard to determine relevance.
- Each criterion is scored from 0-2 points (see examples in the box below using the same superlative)

#### Easiest? NCW (Adding a Question Mark does not make this a question, nor can you discern the direction—easiest to manufacture or easiest to destroy?), Meaning is difficult to discern, 0 points for Relevance

WSW be easiest to implement? CW, 1 point for Generic Relevance (Applicable to any Future Scene)

Which solution is easiest to implement by recovery workers of the tsunami in southern Asia? CW, 2 points for Specific Relevance (Process, Population of people important to this Specific Future Scene)

Since the southern Asian area was impacted by a 9.9 magnitude earthquake leading to the tsunami that left millions homeless and hungry two years after the natural disaster occurred, how might we increase the recovery methods implemented for this area, so that sustainable living conditions prevail in 2038 and beyond?
Step 4 Examples: Scoring for Relevance of Criteria with the UP on the previous page

<table>
<thead>
<tr>
<th>2 points – Specific to the Underlying Problem</th>
</tr>
</thead>
<tbody>
<tr>
<td>A criterion with a core idea that is generic, but with significant details to connect it to the Underlying Problem. These details may include the Condition, Key Verb Phrase, or Purpose, or Population (specific stakeholder from the Future Scene) and to the Process. Future Scene parameters alone (topic, place, time) are not enough to score as Specific. A criterion may be scored as specific to the CP, KVP, P and Population ONLY once. Criteria may be written for specificity and be scored relevant to the Process multiply times.</td>
</tr>
</tbody>
</table>

Specific Criteria Examples to UP listed above

1. Which solution will provide the greatest improvement in housing for the millions lacking in their basic needs following the natural disaster? (Specific to the CP)
2. Which solution will most secure applicable recovery methods in the affected region of southern Asia? (Specific to the KVP)
3. Which solution will target the most sustainable living conditions? (Specific to the P)
4. Which solution will be most accepted by the people of the southern Asian area? (Specific to the POP or Stakeholders in the FUTURE SCENE)
5. Which solution will be the easiest to gain the support of other nations to help return normalcy to the Asian area impacted by the tsunami? (Specific to the PROCESS)

ADDITIONAL EXAMPLES: RELEVANCE OF CRITERIA

<table>
<thead>
<tr>
<th>0 points – (NR) Not Relevant</th>
</tr>
</thead>
<tbody>
<tr>
<td>A criterion that has no relevance to evaluating solutions for this Underlying Problem</td>
</tr>
<tr>
<td>• Which solution will most convince people to vacation in Sri Lanka? (No relationship to Future Scene charge)</td>
</tr>
<tr>
<td>• WSW provides the least support by European governments?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1 point – Generic to any Future Scene</th>
</tr>
</thead>
<tbody>
<tr>
<td>A criterion that could be applied to nearly any Underlying Problem or Future Scene. Generic criteria with Future Scene parameters added (topic, place, time) are still rated Generic.</td>
</tr>
<tr>
<td>• Which solution will be the safest to do in 2038? (time parameter added—but still Generic)</td>
</tr>
<tr>
<td>• WSW last the longest in supporting the people? (People is not the specific target group)</td>
</tr>
<tr>
<td>• WSW people accept the most following the natural disaster? (topic parameter added—Generic)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1 point for Generic Criterion – 0 points for the other Criteria identified as Duplicate (D)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A criterion that duplicates one of the other criteria being used. The criterion may not use the exact wording, but will essentially be evaluating solutions based on the same concept. (For demonstration purposes, these examples are duplicates of Generic criterion.)</td>
</tr>
<tr>
<td>• Which solution will offer the most assistance?</td>
</tr>
<tr>
<td>• WSW most supports the area in need to at the site of the natural disaster? (Including a Topic and/or Place parameter -- still Generic)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2 points for Specific Criterion– 0 points for the other Criteria identified as Duplicate (D)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Duplicated criterion is one that duplicates a criterion being used and scored as Specific. The criterion may not use the exact wording, but will essentially be evaluating solutions based on the same concept. (For demonstration purposes, these examples are duplicates of the Relevant examples.) In the 3 examples below, example #3 would receive 2 Points for Relevance and examples 1 and 2 would be scored with 0 for Relevance. Examples 1 and 2 would also be scored with 0 for Correctly Written.</td>
</tr>
<tr>
<td>1. Which solution will most support southern Asia victims? (Duplicate to #2 #3)</td>
</tr>
<tr>
<td>2. WSW most support disaster victims in southern Asia? (Duplicate to #1 and #3)</td>
</tr>
<tr>
<td>3. Which solution will support disaster victims in southern Asia the most through funds received from the UN? (Specific to the Population and more detail given to connect to the UP)</td>
</tr>
<tr>
<td>4. Which solution will most support the volunteers as they prepare to work in the area</td>
</tr>
</tbody>
</table>

*In the 3 examples above ONLY criterion #3 will be awarded any points. Duplicates are NOT Relevant nor are they scored as Correctly Written.*
A criterion that duplicates one of the other criteria being used and scored as Specific.
The criterion may not use the exact wording, but will essentially be evaluating solutions based on the same concept. (For demonstration purposes, these examples are duplicates of the Relevant examples.) In the 3 examples below, example #3 would receive 2 Points for Relevance and examples 1 and 2 would be scored with 0 for Relevance. Examples 1 and 2 would also be scored with 0 for correctly written.

1. Which solution will most support southern Asia victims? (Duplicate to #2 #3)
2. WSW most support disaster victims in southern Asia? (Duplicate to #1 and #3)
3. Which solution will support disaster victims in southern Asia the most through funds received from the UN? (Specific to the Population and more detail given to connect to the UP)
4. Which solution will most support the volunteers as they prepare to work in the area

In the 3 examples above ONLY criterion #3 will be awarded any points. Duplicates are NOT Relevant nor are they scored as Correctly Written.

Awarding the Relevance Score

- Read and identify the appropriate element for each criterion even if it was not Written Correctly. NR — Not Relevant or a D — Duplicate, or G — Generic, or CP — Condition Phrase, KVP — Key Verb Phrase, P — Process, POP — Population, or PRO — Process. (ONLY the Process column may be circled more than ONCE.)
- Circle the number for Relevance for each criterion in one of the three columns for Relevance. (Only one Relevance score can be circled in each row.)
- For criteria with multiple standards/dimensions, use only the first standard to determine Relevance.
- Tacking on the CP, KVP or Purpose in each criterion will to be correctly written, however it will NOT be scored for specificity after any subsequent entry.
- Without including a Purpose in the UP, specificity for Purpose cannot be awarded.
- Record the corresponding point values — 0 for Not Relevant or Duplicate, or 1 for Generic, or 2 for Specific.
- Only ONE of the criterion identified as a duplicate will be scored for Relevance.
- Verify the total at the bottom of the Generic and Specific columns.
- Verify the sum of the points for Relevancy.
- Indicate that number in the Steps 4–5 score box.

Step 4 – Evaluation Issues for Criteria—Structure and Relevance Criteria

Criteria are more complex than it might seem at first and a variety of mistakes may occur. Examples generated from the following UP cover some of the most common issues or errors.

Since the southern Asian area was impacted by a 9.9 magnitude earthquake leading to the tsunami that left millions homeless and hungry two years after the natural disaster occurred, how might we increase the recovery methods implemented for this area, so that sustainable living conditions in 2038 and beyond?

<table>
<thead>
<tr>
<th>Structure issues (incorrectly written)</th>
<th>Example</th>
</tr>
</thead>
</table>
| No superlative or Superlative is best or Wrong Direction Recognizable question | • Which solution will **better** for the people? **OR** Which solution will be **best** to improve the living conditions of the tsunami victims?  
  • Which one will receive the **least support** of the citizens?  
  • **Fastest?** * or **safest?** |
| Scoring | • Correctly Written – 0 (Requirements: single dimension, superlative, desired direction, recognizable as a question (One or more of these is missing)  
  *Fastest does not identify a desired direction, nor is it written as a recognizable question. **Does not give a desired direction

<table>
<thead>
<tr>
<th>Duplicated Criteria written that are too similar in content</th>
<th>Example</th>
</tr>
</thead>
</table>
|                                                                 | • Which solution is easiest to implement for the recovery workers on Sri Lanka?  
  • WSW cause the least difficult for people working to help Sri Lanka? |
| Scoring | • Correctly Written – 1 Contently the same (only one receive credit)  
  • Relevance Score — 2 for the one scored as Correctly Written to the Specific Population. The Duplicated criterion receives 0 Credit. |
<table>
<thead>
<tr>
<th>Not related to the Underlying Problem</th>
<th>Example</th>
<th>Which solution will be the easiest to convince people to vacation in Sri Lanka?</th>
</tr>
</thead>
</table>
| **Scoring**                          |         | • Correctly written – 1  
• Relevance – 0 Not Relevant *This criterion is not relevant to this UP.*  
Do we give an example of how to make this related? |

<table>
<thead>
<tr>
<th>Not connected to Future Scene</th>
<th>Example</th>
<th>Since the world is focusing on economic gains in their own countries, which solution will be the most acceptable to them?</th>
</tr>
</thead>
</table>
| **Scoring**                   |         | • The Future Scene does not state the world is focusing on economic gains for their own countries, this is an incorrect assumption.  
• Correctly Written – 1  
Relevance – 0 (Without the lead-in, the remaining criterion is not-relevant because the meaning is difficult to discern.) *See next box.* |

| Meaning difficult to discern | Example | Which solution will be the most valuable? (For what or whom?)  
Which solution is easiest for them? (Who? To do what) |
|------------------------------|---------|---------------------------------------------------------------------|
| **Scoring**                  |         | At first this these appear s to be typical generic criterion; however, the intent to be considered when ranking the ideas is not obvious. *Is it most valuable to make money for the government, or to the victims? The same with easiest...to do what?*  
• Correctly Written – 1  
• Relevance  
• 0 for Not Relevant |

| Multiple subjects and objects | Example | Which solution will the victims of the tsunami and volunteers find most acceptable?  
Which solution will have the greatest impact on the improving recovery methods and sustainable living?  
WSW be most beneficial and provide the help needed.  
WSW provide the greatest impact on the clean-up after the tsunami and most relieve stress? |
|-------------------------------|---------|---------------------------------------------------------------------|
| **Scoring**                   |         | • Correctly Written – 0 (more than one subject or superlative)  
• Relevance—Score only the first of the multiple for Relevance  
  - If Specific, separate the multiple in each criterion and evaluate the first one for relevance to the UP-- Examples 1 and 2  
  - If Generic, separate the multiple in each criterion and evaluate the first one for relevance to the UP—Example 3  
  - If Specific, separate the multiple superlatives in each criterion and evaluate the first one for relevance to the UP—Example 4 |

---

All Criteria must be evaluated for Relevance separately except for any duplicated criterion which will be scored a zero (0) for Correctly Written AND (0) for Relevance.

**NOTE:** Tacking on the CP, KVP, or Purpose in each criterion will be scored as correctly written. However, after considering each criterion for being Specific and awarding credit to one criterion, all remaining criterion with the same “tacked-on” phrase will be scored as Generic.

**NOTE:** Creativity is important. When scoring the Overall section after scoring Step 6, evaluators should note the overuse of the same superlative in Step 4. Although using the same superlative for all five criteria can result in full credit being awarded in Step 4, it can have a negative effect on the Creativity Score in the Overall step of the score sheet.
NOTE: If a criterion contains more than one dimension, use the first one to determine the Relevance score. Which solution will result in the largest increase in improvement of disaster recovery methods and sustainable living conditions? 0 points for Correctly Written 2 points for Relevance (scored against first dimension of the criterion). If a team writes each criterion with the same Purpose, KVP, CP, etc. tacked on at the end, then each subsequent criterion after the first one receiving a score for Specificity will be scored as Generic. This should also be considered when scoring Creativity in Step 6.

Since the southern Asian area was impacted by a 9.9 magnitude earthquake leading to the tsunami that left millions homeless and hungry two years after the natural disaster occurred, how might we increase the recovery methods implemented for this area, so that sustainable living conditions prevail in 2038 and beyond?

1. Which solution will provide the greatest improvement in housing for the millions lacking in their basic needs following the natural disaster?
2. Which solution will most secure applicable recovery methods in the affected region of southern Asia?
3. Which solution will target the most sustainable living conditions?
4. Which solution will be most accepted by the people of the southern Asian area?
5. Which solution will be the easiest to gain the support of other nations to help return normalcy to the Asian area impacted by the tsunami?

The maximum scores that can be assigned for Correctly Written criteria is 5 and the maximum total score for Relevance is 10 (each Criterion row for Relevance cannot score higher than 2 points.) In the chart below, all criteria have a Relevance score of 2 points for being Specific to one element of the Underlying Problem and one to the Process. The booklet may not be written with criteria beginning with CP, followed by the KVP, P, POP, or PRO. The stair-stepped examples are used to indicate how the Relevance scores for Criteria listed above was applied.

<table>
<thead>
<tr>
<th>#</th>
<th>Correctly Written (0 or 1)</th>
<th>Not Relevant or a Duplicate</th>
<th>Relevance is Specific to:</th>
<th>Feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Condition Phrase, Key Verb Phrase, Purpose, Population (Stakeholder), Process</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>CP KVP P POP PRO</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>2 2 2 2 2</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>2 2 2 2 2</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>2 2 2 2 2</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>2 2 2 2 2</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>2 2 2 2 2</td>
</tr>
<tr>
<td>CW Total</td>
<td>5</td>
<td>Only Process accepted more than once</td>
<td>Relevance Total</td>
<td>10</td>
</tr>
</tbody>
</table>

Step 4: – Evaluation Issues for Criteria

A step to connect the UP, Solutions and the remaining steps in the booklet.

REVIEW for Step 4 Scores

- **Content:** Standards for judging the solution.
- **Structure:** 4 required guidelines to be correctly written: Single Dimension, Degree of Measure, Desired Direction, Recognized as a Question
- **Not Relevant:** No Relationship to UP or important elements of the Future Scene
- **Generic:** A criterion relevant to any UP/FS (FS)
- **Specific:** A criterion relevant to this competitive UP/FS

Notes about requirements for Step 4 Criteria

- Each criterion must be connected to an element of the UP/FS to be scored Specific.
- Generic criterion would work with any UP/Future Scene.
- May NOT use “best” as superlative.
- The Population or Stakeholders must be specific to the competitive Future Scene.
- **New Rule:** Each criterion must be recognizable as a question. Remember a superlative + question mark does NOT equal a question!
**STEP 5 – APPLY CRITERIA to SOLUTION IDEAS (GRID)**

**Objective:** To develop an evaluation matrix (grid) that uses the criteria from Step 4 to rank 8 solution ideas to determine the best solution.

Correctly Used ..................................................................................................................... 0 1 2 3 4 5

NO WORK ATTEMPTED ........................................................................................................... 0

**Content:** Students select 8 of their most intriguing solution ideas to enter into the evaluation matrix (grid). The grid is used to rank the solution ideas, considering one criterion, written in Step 4, at a time. With correctly added rows of ranks, the idea with the highest overall ranking is the best solution that will be used for the Action Plan. Students must understand the importance of the Criteria selected and Step 4 and the assignment of applicable ranks on the Grid in Step 5 will produce values for the best solution to be used in Step 6.

**Structure:** An accurate grid follows these guidelines.

1. Considering one criterion at a time, each of the solution ideas are ranked against all others using that criterion. The ranking is repeated for each of the criteria.
2. In each column, solution ideas are ranked from 1 (low) to 8 (high) or to the highest number that equals the number of solutions ideas in the grid. Elementary students use a rank from 1 to 4.
3. If fewer than 8 solutions, (4 for Elementary level) are generated in Step 3, enter all the ideas on the grid. The highest points then equal the number of ideas. If you have 3 solutions ideas, then the ranks would be 1, 2, and 3.
4. Each number is used once in each column. (Exception: If two ideas rank equally in satisfying a criterion, half points that are mid-way between the two ranks may be used. For example, two ideas that are equal and would have been ranked 5 and 6 may each be ranked 5.5.)
5. The rankings for a single criterion may be weighted if it is especially important. In this case, each rank must show the weight; if double weighting is used the ranks would range from 2 to 16 (2 to 8 for elementary).
6. The ranks are added across the rows and the totals entered into the final column of the grid.
7. The solution idea with the highest points must be used as the basis for the Step 6 Action Plan, if not, score as manipulated grid with a score of zero (0).
8. If there is a tie for the highest points, students must choose to use only one. Breaking ties may be done in several ways. The method used for making the choice may be shown on the grid, but this is not required.
9. If two or more unrelated solutions are used to develop the Action Plan, the score for the grid will be an automatic zero (0).
10. If no work is attempted on this section a score of zero (0) must be awarded.

**CORRECTLY USED (0—5)** measures the accuracy in completion of the evaluation matrix (grid).

- 5 points are awarded for a perfect grid.
  - Add the totals of the final column. If the total is 180 for 8 solution ideas in the grid (75 for 5 solution ideas in the grid or 40 for 4 solutions), it is most likely that the grid has been completed correctly.
  - One error = 4 points, two errors = 3 points, three errors = 2 points, four errors = 1 point and 5 or more errors = 0 points
- 1 point is deducted for these mistakes:
  - Each instance of using a number more than once in a column (except for half points for adjacent ranked solutions)
  - Each instance of incorrect addition across a row
- 0 points only is awarded for obvious grid manipulation, such as each row containing the same numbers which ignores the problem solving process.
- 0 points only is awarded if the solution idea that scored the highest is not used as the main focus of the Step 6 Action Plan. This includes cases in which the highest ranking idea and another idea of lower rank are combined in the Action Plan with equal weight. (Other related ideas may be used as support as long as they are not the primary focus.) If a team combines two or more unrelated solutions to develop their Action Plan, the grid should receive an automatic zero (0) points for Correctly Used.

*Note Chart on Page 4 for any differences in Governor’s Cup and Component Events.*

**NOTE:** If there is a tie for the highest ranking solution in the grid, students must choose to use one or the other. The team is NOT required to explain to evaluators the reasoning behind its choice.
Determine the number of points to award for Correctly Used.
- Record the points in the Correctly Used section of the score sheet.
- Indicate that number in the Steps 4-5 score box.
- **5 points**: the Grid is perfect; not manipulated; the top solution used
- **4 points**: the Grid contains one error (Addition error or using the same number twice in the same column, etc.)
- **3 points**: the Grid contains two errors (Addition mistake/s or the same number/s used twice in the same column, etc.)
- **2 points**: the Grid contains three errors (Any combination of addition mistake/s or the same number/s used twice in the same column, etc.)
- **1 point**: the Grid contains four errors (Any combination of addition mistake/s or the same number/s used twice in the same column, etc.)
- **0 points**: the Grid contains five or more errors (any combination of addition mistakes, the same number/s used twice in the same column, an incomplete grid, etc.), is manipulated (all columns have the exact numbers in each row), combined unrelated solutions in the Action Plan, or the top solution was not used.

**Grid example used with UP on page 10 and Criteria from page 25**

<table>
<thead>
<tr>
<th>Grid Solution Ideas</th>
<th>Solutions</th>
<th>Step 4 Criteria</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>12</td>
<td>Network or First Responders</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>Restoration of Phone Service</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>Government &amp; local communities</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>11</td>
<td>Adopt-A-Disaster Area</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>9</td>
<td>World Bank &amp; Red Cross--Funds</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>16</td>
<td>Food Drops</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>14</td>
<td>Free medical clinics</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>15</td>
<td>Quick-Cross Bridge</td>
<td>4</td>
<td>2</td>
</tr>
</tbody>
</table>

This Grid Contains 3 errors. Duplicated number 4 in column 4 and rows 1 & 2 are added incorrectly.

**Step 5: – Evaluation Issues for Applying Criteria to Solution Ideas Using a Grid**

**Ranking solutions from Step 3 using the Criteria in Step 4.**

**REVIEW for Step 5 Scores**
- **Content**: 8 solutions are selected by the team to rank.
- **Structure**: One criterion is used to rank solutions against each other. Ranks are 1—8. Each number is used only once in each column of the Grid. Rows are added for totals. The highest scoring solution is used in Step 6 to detail the Action Plan.

**Notes about requirements for Step 5 Criteria**
- 5 points is awarded for a perfect Grid
- Each mistake (addition, duplicated number in a column, etc. results in a deduction of 1 point)
- Manipulated Grid scores 0 (numbers are the same in each row, the highest ranking solution is NOT used as the Step 6 Action Plan, or two or more solutions are combined for a major focus in the Step 6 Action Plan)
- Points in a column may be split between two solutions with adjacent points.
- A solution can be weighted with a multiplier added without penalty.
**STEP 6 – DEVELOP an ACTION PLAN**

Objective: To develop an Action Plan based on the highest scoring solution idea in Step 3 and to explain and demonstrate its relevance and importance to the UP and the Future Scene.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relevance</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>Effectiveness</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>Impact</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>Humaneness</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>Criteria in the Development of the Action Plan</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>Development of Action Plan</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>NO WORK ATTEMPTED</td>
<td></td>
</tr>
</tbody>
</table>

Content: An Action Plan is a proposal for solving the Underlying Problem. The Action Plan should explain in detail the what, how, who and why, of the solution idea. Developing an AP involves moving from creative ideas into action; a new idea is incomplete until it is a workable idea. The AP demonstrates how it addresses the problem area in Step 2 and how it affects the Future Scene.

Structure: Action Plans vary widely in their structure, but include some or all of these elements:

1. The Action Plan MUST focus primarily on the best solution as identified by using the evaluation matrix (Grid) in Step 5.
2. The Action Plan may first introduce the basic idea, similar to what was written about it in Step 3 – Solution Ideas.
3. Many additional facets may be added to the idea at this point, with the goal of showing a complete plan and strategies for implementation of the best solution. These new facets should not be restated solutions from Step 3. Combining two or more solutions is not recommended.
4. The Action Plan must address specific criteria either implicitly or explicitly in a convincing manner.
5. The Action Plan may describe timelines and tasks, details on how the solution will operate, potential obstacles and how to overcome them, how the plan will address the Underlying Problem, how/why it will have a positive impact on the Future Scene, etc.
6. If a team combines two or more unrelated solution ideas in their AP, the evaluator should score only the first solution for Relevance, Effectiveness, Impact and Humaneness and adjust the Grid score in Step 5 to an automatic zero (0).
7. A score of 1 on Relevance, Effectiveness and Impact should be assigned for action plans that are “off” the UP and the Future Scene all together, or that contain a UP with a critical error in its structure.

**RELEVANCE (1-5)—** measures the extent to which the Action Plan address the KVP and the Purpose. It is determined by comparing the Action Plan to goals stated in the KVP and the Purpose in the UP and evaluating the extent of the relationship. Lower scores are given to an AP that is off target or not specific. If team does not use the highest ranked solution from Step 5, they will receive a 1 in Relevance.

**Awarding the Relevance Score**

- Use the descriptors to evaluate the relationship of the Action Plan to the UP.
- Indicate the score on the first row of the rubric.
- Record the Relevance score in the Step 6 score box. Rating; Process

- **5 points:** If the AP is developed from a solution in Step 3 that is the highest ranking and has an excellent relationship to the UP. (See the scoresheet for scores to be awarded for the range of Relevant solutions)
- **4 points:** If the highest ranking solution idea does a good job of addressing the UP.
- **2-3 points:** If the highest ranking idea has some relationship to UP; another solution might be better.
- **1 point:** If the AP does not address the UP, is not the highest ranking solution, OR is either Circular, a Restatement, uses an Absolute KVP, is Broad or Ignores the Future Scene, OR had no Purpose.
EFFECTIVENESS (1-5) – measures the potential ability of the Action Plan to successfully solve the Key Verb Phrase and fulfill the Purpose. A low score is given to an AP that does very little or nothing to achieve the goals stated in the UP. In differentiating between Relevance and Effectiveness, Relevance asks whether the AP addresses the UP; Effectiveness asks whether the Action Plan successfully solves the UP.

**Awarding the Effectiveness Score**
- Use the descriptors to evaluate the extent to which the Action Plan successfully solves the UP.
- Indicate the score on the second row of the rubric.
- Record the Effectiveness score in the Step 6 score box.
  - **5 points**: If the AP creatively solves the UP and gives detailed explanation.
  - **4 points**: If the AP adequately solves the UP and provides elaboration clearly connected to the UP.
  - **2-3 points**: If the AP solves some aspects of the UP and elaboration lacks connection to the UP.
  - **1 point**: If the AP does little to solve UP; OR UP is either Circular, a Restatement, uses an Absolute Verb is Broad or Ignores the Future Scene, OR had no Purpose.

IMPACT (1-5) – measures the strength and positive impact the AP will have on the Future Scene. Action Plans scoring high in impact will make the Future Scene situation better for most of the stakeholders and create a positive effect for the future. An effective Action Plan for a UP that scores well in Focus and Adequacy in Step 2 usually receives a high score in this section. If the Underlying Problem scored low in Adequacy, the Impact score will most likely also be low. Lower scores are assigned to Action Plans that are not as good in one or both of these areas.

**Awarding the Impact Score**
- Use the descriptors to evaluate the strength of the Action Plan’s impact on the Future Scene.
- Indicate the score on the third row of the rubric.
- Record the Impact score in the Step 6 score box.
  - **5 points**: If the AP has a strong, positive effect on the FS; UP scored high in Adequacy.
  - **4 points**: If the AP has some effect on FS; UP scored average in Adequacy.
  - **2-3 points**: If the effect on the Future Scene is not strong; UP scored low in Adequacy.
  - **1 point**: If the AP has little to no effect; OR UP is either Circular, a Restatement, uses an Absolute Verb is Broad or Ignores the Future Scene, OR had no Purpose. UP scored one (1) in Adequacy.

HUMANENESS (1-5) – This scale measures the productive, positive potential of the AP as opposed to its destructive, negative potential. To score this section, the evaluator must anticipate the practical consequences in implementing the Action Plan. Humaneness of an Action Plan is scored independently of Relevance, Effectiveness and Impact. While an AP may score poorly in the other Step 6 criteria, it can still score well in Humaneness. The evaluator must score Humaneness on a 1-5 scale. A score of 2 on the scale represents a neutral solution. Higher numbers are awarded if the solution actively seeks to be constructive; lower scores are assigned if it is actively destructive. Use the descriptors on the scoresheet to determine the numerical score.

**Awarding the Humaneness Score**
- Use the descriptors to evaluate whether the potential of the Action Plan is destructive for the Future Scene, neutral, or productive and positive.
- Indicate the score on the fourth row of the rubric.
- Record the Humaneness score in the Step 6 score box.
  - **5 points**: team booklet is practical, positive, constructive AP is written.
  - **3-4 points**: team booklet’s potential outweighs negative potential in AP.
  - **2 points**: team booklet is neutral, neither negative nor positive.
  - **1 point**: team booklet is negative or destructive.

CRITERIA IN THE DEVELOPMENT OF ACTION PLAN (1-5) – measures the extent to which the Criteria, Grid and Action Plan validate the solution receiving the highest total rank will be used as the Action Plan. Evaluation of this element does not require that the booklet contains verbatim discussion of each criterion in the Action Plan. More creative teams will connect to the criteria with a relevant explanation of the best solution.
Awarding the Criteria in the Development of Action Plan Score

- Use the descriptors to evaluate the Criteria in the Development of the Action Plan.
- Indicate the score on the row of the rubric.
- Record the Development of Action Plan score in the Step 6 score box.

- **5 points**: AP addresses specific criteria in a convincing manner.
- **4 points**: AP makes some valid connections to the specific criteria.
- **2 or 3 points**: AP’s connection to the criteria is minimal or unclear.
- **1 point**: AP does not address the criteria.

**DEVELOPMENT OF ACTION PLAN (1-10)** — measures the extent to which a team creates a strategy for addressing the UP. An AP that scores high in this area would fully describe the action to be taken and outline the steps that are necessary to complete the plan. The idea is to paint a complete picture of the plan.

- A well-developed Action Plan is fully explained and elaborated.
- The AP may also explain the challenges that must be overcome to achieve its goal.
- An AP that simply restates the solution idea from Step 3 would score on the low end of this scale.
- The AP may describe any obstacles to overcome in implementing the plan.
- The AP explains why and how the plan has a positive impact on the Future Scene, topic and society.

Awarding the Development of Action Plan Score

- Use the descriptors to evaluate the Development of the Action Plan.
- Indicate the score on the row of the rubric.
- Record the Development of Action Plan score in the Step 6 score box.

- **9 or 10 points**: team booklet is elaborated, amplifies actions to be taken, & considers obstacles that may occur.
- **6, 7 or 8 points**: team booklet illustrates who, what, why and how in detail.
- **3, 4 or 5 points**: team booklet provides some elaboration; more support of ideas is needed.
- **1 or 2 points**: team booklet description of AP is written; team rewrites Step 3 solution idea.
- **0 points**: If no work was attempted for Step 6.

**Step 6 – Possible Evaluation Issues for Action Plan**

<table>
<thead>
<tr>
<th>Two plans are presented</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>If an Action Plan has combined two or more unrelated solution ideas, the result is essentially presenting two separate plans. (Ideas from other solutions are allowed if they support the best solution, but both cannot be the focus of the AP.)</td>
</tr>
<tr>
<td></td>
<td><strong>Scoring</strong></td>
</tr>
<tr>
<td></td>
<td>Score only the first solution for Relevance, Effectiveness, Impact, and Humaneness.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Action Plan unrelated to the UP</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>It is possible for an Action Plan to be unrelated to the UP.</td>
</tr>
<tr>
<td></td>
<td><strong>Scoring</strong></td>
</tr>
<tr>
<td></td>
<td>A score of one (1) is awarded for Relevance, Effectiveness and Impact.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Action Plan unrelated to Future Scene</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>It is possible for an Action Plan to be completely unrelated to the Future Scene.</td>
</tr>
<tr>
<td></td>
<td><strong>Scoring</strong></td>
</tr>
<tr>
<td></td>
<td>A score of one (1) is awarded for Relevance, Effectiveness and Impact.</td>
</tr>
</tbody>
</table>
UP to be used to score the Action Plan

Since the southern Asian area was impacted by a 9.9 magnitude earthquake leading to the tsunami that left millions homeless and hungry two years after the natural disaster occurred, how might we increase the recovery methods implemented for this area, so that sustainable living conditions prevail in 2038 and beyond?

Step 6: Development of Action Plan

The Adopt-a-Disaster-Area (ADA) program is a disaster recovery program that uses donations for the recovery and mentoring of communities in southern Asia after a natural disaster. The ADA will draw in humanitarian groups and private sponsorships to help support these at-risk Asian areas.

The non-profit ADA appoints a Relief Management Specialist (RM Specialist) to a disaster-stricken area of land in 1 square kilometer in size, which is the size of most villages or small towns (See Obstacles below). Donation funds from sponsors will be administered within that land area to provide both relief aid and mentoring programs that promote a sustainable community for the future. Selection of each area to receive aid will be based upon an application process that emphasizes need. The program’s end phase will provide administrative infrastructure in southern Asia to allow for sustainable communities after natural disasters.

Once an area has been selected, the Relief Management Specialist assembles an administrative council for distribution of funds. This council will be made up of area government officials, community leaders, business owners, and a randomized cross-section of the community. The council will best determine what their community needs to not only recover, but also to provide for sustainability during future disasters. The RM Specialist will serve as a guiding hand for the council, but will allow the council to make the final decisions for their community. The RM Specialist will also coordinate activities of volunteers with technical backgrounds such as environmental and civil engineers, public health officials, and green architects, to provide recovery plans that can be sustainable. After the initial plans are drawn up, an ADA financial advisor will provide an investment plan for 1% to 5% of the initial donation allotment to help continue the program beyond its last phase.

This solution solves our Underlying Problem because it provides the disaster victims necessary relief aid, while introducing new methods for future disaster recovery through its mentorship programs. This solution also allows sustainable living in the area because it creates new homes and businesses with the donation money in order to restart the south Asian countries affected by disaster.

The ADA plan will begin immediately after approval. The first phase will appoint the RM Specialist to gather information on the area’s needs, increase public awareness about the ADA’s efforts, and begin a media blitz to raise additional funding across the globe (See Obstacles below). Within 6 months, the council will be set and implementation strategies will be drawn. The development of the management teams, regional advisors and volunteers will begin as soon as the council approves the relief plans to begin phase 2. Phase 3 will focus on the sustainable aspect of recovery, creating future disaster recovery plans and the financial investment plan.

Criteria: The ADA solution addresses our criteria by greatly decreasing the negative impact of natural disasters through providing relief aid and training on how to respond to future natural disasters. This solution may only increase sustainable living conditions if donations continue. The program depends on donations as well so it may take up to a year before relief can be provided.

Obstacles: Some areas in southern Asia have high population densities in which the relief management area needs to be smaller or larger than 1 square kilometer. This area can be adjusted based upon different population densities using preset criteria. It might be difficult to get enough funding support because the surrounding countries are poor. It may also be difficult to gain support after the media stops reporting on the disaster area. History shows that private donations are the greatest soon after a disaster, but they slow down after the news stops reporting on the event. By developing a strong program that stresses the importance of long term funding, the program will hopefully be long lasting. There may also be fear of money being dishonestly spent. Management rules will be implemented to monitor the use of funds.
Step 6: Evaluation Issues for the Action Plan

The Action Plan is the result from the written content in the previous steps of the written booklet.

**REVIEW for Step 6 Scores**

Content: The Action Plan is a written proposal that demonstrates the major area of concern from the Step 2 UP. The action plan moves from creative ideas into the action to be implemented to solve the UP and impact the overall Future Scene.

Structure:

- **Scores up to 5 points**
  - Relevance: Addresses the UP
  - Effectiveness: Solves the UP
  - Impact: Effect on the Future Scene
  - Humaneness: Potential positive influence of the Future Scene
  - Criteria in the Development of the Action Plan: Integration of Specific vs Generic into Action Plan

- **Scores up to 10 points**
  - Development of the Action Plan: Extent of elaboration of the solution idea

**Notes about requirements for Step 6 Action Plan**

- The Action Plan must be written from the highest ranking solution identified from the solutions generated in Step 3, assessed with criteria written in Step 4 and ranked using the Grid in Step 5.
- The Action Plan is an extension of the Solution generated in Step 3.
- Caution should be taken to avoid combining solution ideas from Step 3. If a solution idea that was not selected as the best solution becomes the major or equal focus of the Action Plan, the Action Plan will be scored with 0 in Step 5 and only the first solution identified with be scored for points in Step 6.

**OVERALL**

**Objective:** To combine content (research) and process (creative problem solving) effectively to work from a Future Scene into a focused Action Plan using the creative problem solving process. This score is a holistic view of the entire booklet—not of any particular part. Scoring content within the Overall step should be considered regardless of whether or not individual Steps 1-6 received full credit.

Research Applied ........................................................................................................................................1 2 3 4 5 6
Creative Strength .........................................................................................................................................1 2 3 4 5 6
Futuristic Thinking ......................................................................................................................................1 2 3 4 5 6

**Research Applied (1-6)—measures the application of research throughout the booklet.** Each step of the process is examined for connection to the research available on the topic, as well as knowledge of issues and trends in general as related to the Future Scene. Vocabulary terms, concepts facts, and incidents from the research are all indications of research applied. Evaluators are encouraged to keep brief notations of research used throughout the booklet to reference when awarding research points.

**Awarding the Research Applied Score**

- Review the written booklet for evidence of research applied.
- Use the descriptors to evaluate the extent to which knowledge of research is evident.
- Indicate the score on the first row of the rubric.
- Record the Research Applied score in the Overall score box.
- **6 points:** team booklet identifies research that is apparent in connecting challenges, solution ideas and AP.
- **4-5 points:** team booklet shows research that is noticeable in generating challenges, solution ideas and AP.
- **2-3 points:** team booklet demonstrates a limited knowledge of topic; more research could be tied to ideas.
- **1 point:** team booklet demonstrations minimal use of research, terms, concepts, issues, trends, etc.
CREATIVE STRENGTH (1-6)—measures the overall creative, productive thinking in evidence throughout the booklet. **Skillful use of the problem solving process is also indicative of creative thinking,** thus high scores on the creativity scales of Fluency, Flexibility, Elaboration, and Originality are also signs of creative strength. Evaluators should review each step for innovative or unconventional thinking and for ideas indicating fresh insights and perceptions. Responses showing creative strength are those requiring intellectual energy to make mental leaps beyond obvious or commonplace responses. Creative Strength is also evidenced in the varied use of the process while problem solving. **Repetition of words or written phrases in various sections of the booklet limits the creativity of the team.** Form writing in each step also indicates that a team lacks creativity.

<table>
<thead>
<tr>
<th>Awarding the Creative Strength Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review the written booklet for evidence of research applied.</td>
</tr>
<tr>
<td>Use the descriptors to evaluate the extent to which knowledge of research is evident.</td>
</tr>
<tr>
<td>Consider if the UP had a Critical Error in Step 2.</td>
</tr>
<tr>
<td>Consider the use of superlatives used in Step 4.</td>
</tr>
<tr>
<td>Indicate the score on the first row of the rubric.</td>
</tr>
<tr>
<td>Record the Research Applied score in the Overall score box. <strong>Rating: Content</strong></td>
</tr>
<tr>
<td><strong>6 points:</strong> team booklet has strong display of inventive, ingenious ideas not solely dependent on scores awarded for Originality.</td>
</tr>
<tr>
<td><strong>4-5 points:</strong> team booklet has creative productive thinking and fresh insights going beyond the ordinary.</td>
</tr>
<tr>
<td><strong>2-3 points:</strong> team booklet has evidence of innovative thinking.</td>
</tr>
<tr>
<td><strong>1 point:</strong> team booklet demonstrates traditional ideas rather than innovative ideas.</td>
</tr>
</tbody>
</table>

FUTURISTIC THINKING (1-6)—measures the student’s ability to address the time frame of the Future Scene, and to extrapolate relevant trends and technologies from its research as they identify futuristic challenges and to create workable, futuristic solutions. The evaluator should note there is a difference between creative, futuristic solutions and those solutions that are trivial and or “cutesy.” Evaluators should reward thinking that shows evidence of futuristic trends or technologies. Each step should show an understanding of how it could impact future society.

<table>
<thead>
<tr>
<th>Awarding the Futuristic Thinking Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review the written booklet for evidence of futuristic thinking.</td>
</tr>
<tr>
<td>Use the descriptors to evaluate the extent to which futuristic concepts are present throughout the booklet.</td>
</tr>
<tr>
<td>Indicate the score on the third row of the rubric.</td>
</tr>
<tr>
<td>Record the Futuristic Thinking score in the Overall score box. <strong>Rating: Content</strong></td>
</tr>
<tr>
<td><strong>6 points:</strong> team booklet does an excellent job of tying ideas to futuristic concepts.</td>
</tr>
<tr>
<td><strong>4-5 points:</strong> team booklet shows good understanding of how ideas impact the future.</td>
</tr>
<tr>
<td><strong>2-3 points:</strong> team booklet shows basic understanding of how ideas impact the future.</td>
</tr>
<tr>
<td><strong>1 point:</strong> team booklet shows little understanding of how ideas impact the future.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Finalizing the Booklet Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review to be sure that comments have been written for each step. (See Feedback in Evaluation).</td>
</tr>
<tr>
<td>Check that all of the scores have been accurately transferred into the score boxes for each step.</td>
</tr>
<tr>
<td>Total each step and double-check the math for accuracy. (Paper score sheet only.)</td>
</tr>
<tr>
<td>Add the totals from each step and record the total for the booklet in the Total Score box at the end of the booklet, double-checking the math for accuracy. (Paper score sheet only.)</td>
</tr>
<tr>
<td>After completing all of the booklets in the set, determine the Rank.</td>
</tr>
</tbody>
</table>
Step 6: – Evaluation Issues for Overall

The scores for Overall are a culmination of the work completed in all Steps of the booklet—a holistic view. Different Steps and how the students wrote particular elements can positively or negatively impact the scores awarded.

**REWIEW for Overall Scores**

**Research Applied:** Emphasizes research of the topic, knowledge and trends as the topic relates to the future.

**Creative Strength:** Overall creative, productive thinking that is not limited to high scores in the various steps of the FPS process. Intellectual leaps for innovative or unconventional thinking that indicate insights and perceptions. Repetition of phrases limits the creativity score.

**Futuristic Thinking:** Assesses the timeframe of the Future Scene and identify challenges and workable solutions. Seeing the world 20-30 years in the future as new trends cause new developments.

**Notes about requirements Overall**

- In the 3 areas where you can score Overall, the booklet should have ideas that are more than what is evidenced in the world today.
- A booklet without evidence toward research of the trends as related to the topic should be scored lower in Research Applied.
- Using the same superlative or tacking on the same phrases to each criterion in Step 4 can be scored lower for Creative Strength.
- A written booklet without the capacity to go beyond what is currently taking place today should score lower in Futuristic Thinking. The movement should go beyond what we currently experience in the world today.

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**SUCCESS!**

The evaluator’s certification session is now completed. Please review all steps and SUBTOTALS for mathematical errors and then transfer those scores on the first page of the scoresheet and assign a final ranking.

Before leaving the session you must receive three (3) required items to complete the certification process. You must have the official **FPS Certification Booklet** (this is NOT the booklet you scored during your session), **MG/HS scoresheet** and the copy of the **FPS Evaluation Manual**. You must complete and return the FPS Certification Booklet to KAAC **within 14 days** for coaches and evaluators with 0-1 year status for FPS certification. If booklets are not returned within 14 days, the evaluator will be required to attend another FPS certification clinic before submitting the booklet for certification.

To obtain a 2+ certification number you are required to complete the online certification quiz. Only registrants with two consecutive previous years of FPS certification (2014-2015 and 2015-2016) may obtain a 2+ certification number. If you were not certified during these years, you are required to attend a 0-1 year certification clinic and complete the certification booklet. The FPS Trainer has a copy of last year's FPS numbers for you to reference. If your certification number began with a one (1) or two (2), then you will be eligible to take the 2+ Certification quiz. Numbers beginning with a zero (0) MUST complete the FPS Certification Booklet and send it to KAAC within 14 days. Questions for the 2+ quiz will be asked about the FPS scoring process and will be specific to the **FPS Certification Booklet** (given to you by the FPS trainer after your Certification session has ended), **FPS Evaluation Manual** and **MG/HS Scoresheet**.
GENERAL COMMENTS

A team that attempts to work on a particular section of the booklet must receive a minimum score of 1 point for each criterion in that section. **If the entire section is COMPLETELY blank and no work has been attempted, however, a score of zero (0) can be awarded for that section.**

Exceptions to the rule are: Condition Phrase, Stem, Key Verb Phrase, Purpose, and Future Scene Parameters in Step 2, the use of Criteria and Grid in Steps 4 and 5.

Upon completing the evaluation of each step, write specific comments on the scoresheet. Although there is only enough space to make a few brief observations, comments are extremely important. This is the evaluator’s chance to encourage students and give them pointers to improve their problem solving skills. Initially, students look at the score to determine how they performed on a booklet. Shortly thereafter, however, they read the evaluator comments on the scoresheet for the true determination of their performance, and it is the evaluator’s insights that make the last impression.

After the evaluator complete an evaluation, write comments and assign scores for each section, the total number of points should be determined and entered in the appropriate space. **Double-checking addition is a must!**

**Ranking**

The best way to compare booklets is with a ranking system. Using such a system, each evaluator scores an equal number of booklets and then ranks each booklet according to the total points given to each booklet. Booklets are ranked from 1 (best) to the number of booklets scored. A rank of 1 goes to the highest scoring booklet, a rank of 2 goes to the second highest scoring booklet, and so on. Ranking booklets eliminates scoring differences between tough and lenient evaluators. It also creates a “common language” for comparing booklets from different samples. The rank of each booklet is recorded in the appropriate space on the scoresheet.

Each step has criteria in the evaluation process that identify the key elements in an FPS booklet. The evaluation of these elements helps students improve their problem solving skills. While improvement of student work is the primary intent of the evaluation system, it is also designed so students who do the best work receive the highest ranks. **Therefore, when the evaluator finishes a sample of booklets, the evaluator should review the booklets to insure that the students that did the best work receive the highest ranks.**

**Competitive Scoring**

Students do not see the Future Scene in advance. In these situations, evaluators reward students for responding directly to the Future Scene. Doing so recognizes students who use their creativity to respond spontaneously to a situation, thereby furthering FPSP’s educational goal of preparing students to respond to real world challenges.

For clarification, consider a team preparing for the State Finals or the International Conference. The students spend time researching the topic and developing ideas that might be relevant to the Future Scene. However, the team does not see the Future Scene until the two-hour competition begins. The students must analyze its contents and determine what part of their research and information on the topic applies to the Future Scene, and what does not. Unfortunately, students sometimes rely too much on their preparation and do not use their creativity to respond directly to the Future Scene. The result may be a booklet that is “flat,” does not pertain to the Future Scene. Do not confuse this with a team that is well-prepared and connects the research to the competition Future Scene. Research skills are important, and FPS strives to take students to the next level, asking them to apply their knowledge to a specific, focused situation.

FPSP creates Future Scenes with these thoughts in mind. The Future Scenes emphasize preparation, but also contain elements that emphasize creativity:

1. Future Scenes revolve around an imaginary, yet realistic, futuristic scenario. The imagined and futuristic elements of the Future Scene allow FPSP to use its own creativity in producing the scenarios. The FPS program intends for students to build upon the creative elements of the Future Scene and showcase their own creativity.
2. Future Scenes concentrate on only a portion of the topic. Not all of the student’s research and information is applicable to the Future Scene and the team members must adjust to utilize appropriate information to their work in the booklet.

An example is the topic of Drugs used for the affiliate final one year. Instead of describing traditional addictions and the effects of drugs on society, the Future Scene detailed a virtual reality program with drug-like effects. Using the virtual reality program as the basis of the Future Scene required students to use only their background on the effects of drugs rather than their knowledge of drugs as a whole.
EVALUATION SYSTEM FOR Middle Grades and High School Region

Trainer Pre-Scoring of Middle Grades and High School Region
Each Middle Grades and High School booklet advancing to Governor's Cup Region will be pre-scored for Steps 2, 4 & 5 by KAAC FPS State Trainers in order to establish consistency throughout regionals evaluations. The UPs, Criteria and Grid pages will be sent to KAAC to be pre-scored by teams of three trainers not associated with the regional competition. The Underlying Problem, Criteria and Grid scores will be returned to the regional Composition and FPS Coordinator for distribution to the FPS evaluators. These will be the mandated scores and must be adopted by the evaluators. The FPS and Composition Coordinator must check the scoresheets against the mandated scores and require the evaluators to adopt the assigned values before the scores are entered into the electronic scoring program.

EVALUATION SYSTEM FOR THE STATE FINALS

Trainer Pre-Scoring of State Finals
Each booklet advancing to Governor’s Cup State Finals will be pre-scored for Steps 2, 4 and 5 by KAAC FPS State Trainers in order to establish consistency throughout First Round of evaluations. No FPS trainer who is also a coach with a team attending the State Finals may pre-score booklets in the division which they coach. Each booklet’s mandated Steps will be pre-scored by teams of two (2) a minimum of three (3) times and all team members must be in agreement when assigning scores. These will be the mandated scores and must be adopted by the evaluators in the First Round of evaluations. The FPS Trainers must check the scoresheets against the mandated scores and require the evaluators to adopt the assigned values before the scores are entered into the electronic scoring program. Coaches with teams competing at the State Finals will not have access to booklet codes or scoring information in the division which their team competes.

First Round Evaluations
Please note that FPS coaches and evaluators who work exclusively at the Elementary level of FPS competition will not be eligible to score at the State Finals. Each team is required to provide an evaluator with a current certification for the first round of evaluations. Each evaluator will be assigned a group of five booklets to evaluate. This is the “en masse” evaluation.

Booklets are assigned into five-team groups based on the following criteria:
1. Teams from the same region shall not be in the same group.
2. No more than three regional championship booklets shall be in the same group.
3. No fewer than two regional runner-up booklets shall be in the same group.

Subject to these provisions, the pairings shall be randomly drawn each year.
First round evaluators will adopt the pre-scoring value assigned by the trainers. The pre-scored sheets Steps 2 4 & 5 will be included in the packet of booklets distributed to the evaluators. Before approving the evaluations of each first round evaluator, the trainer checking that evaluation shall notify the first round evaluator of any instance in which the evaluator:
1. Fails to award the pre-scores from Step 2 as determined by the trainers; or
2. Fails to award the pre-scores from Steps 4 and 5 as determined by the trainers.

Because first round evaluators will have access to the pre-scoring values and trainers, the evaluator notes they receive shall contain model Underlying Problems to support a pre-scores.

Comparison of First Round Composite Ranks
At the conclusion of the first round of evaluations, the ranks that each team receives are added together to provide a first round composite rank. Composite ranks determine whether a booklet is placed in the “Top Five” group or the “Six through Ten” group.

Determining the Top Five Championship Group
The five booklets with the lowest composite ranks advance to the Championship Round of evaluation. Paired Comparison Analysis (PCA) is used to break any ties near the desired five-team cutoff point. For example, if the top first round composite ranks are 5, 5, 6, 7, 8, 8, and 8, teams with ranks 5, 5, 6, and 7 would advance automatically to the Championship Round. Teams with ranks of 8 would be placed in PCA, with the “better” booklet(s) remaining in the Top Five group and the remaining booklet(s) joining the Six through Ten group.

Championship Round of Evaluation for the Top Five Group
In the Championship Round, three trainers independently evaluate the top five booklets, assessing a rank to each. The Program Director of Kentucky Future Problem Solving selects the trainers who evaluate in the Championship Round.
Trainers may not evaluate the team they coach. At the conclusion of evaluation, the ranks of each team are added together, giving us a composite rank that determines final placement.

**Paired Comparison Analysis for the Six through Ten Group**

Booklets not chosen for the Championship Round will then be added to PCA from the first round of evaluations until at least ten (10) teams from the first round have advanced to either the Championship Round or PCA. The total number of teams admitted to PCA is within the discretion of the Program Director and shall include all booklets tied for 6th through 10th place and any ties.

The Program Director shall select the three trainers who perform PCA. Trainers cannot evaluate a team they coach. One of these trainers is designated the lead evaluator and facilitates the process, breaking any ties between the other two evaluators. The two scoring evaluators shall order the teams by engaging in a step-by-step, head-to-head comparison of two booklets at a time. The values attributable to each step in this comparison are set forth in the attached PCA score sheet. However, at no time shall the PCA evaluators merely compare the raw scores from the first round. The PCA evaluators must read steps 2, 4, 6. Concerning steps 1 and 3, the PCA evaluators may reference the first round scores, but must also randomly select and read not less than 4 challenges and solutions in each book before assigning a point value for those steps. Evaluators that participate in PCA cannot also score in the Championship Round. PCA shall be conducted until places six (6) through ten (10) have been finalized.

**INTERNATIONAL CONFERENCE PHILOSOPHY OF EVALUATION  See page 31**

The International Conference (IC) winners are those students that exhibit the best Future Problem Solving skills in response to the Future Scene. More specifically, evaluators look for top-quality work in regard to the following three areas:

- Research
- Use of FPS model
- Spontaneous response to specifics of International Conference Future Scene

**A TIP ABOUT THE INTERNATIONAL CONFERENCE FUTURE SCENE**

Future Scenes become more difficult as the FPS season progresses. Early in the year, Future Scenes are usually more open-ended and allow students to develop and enhance their skills. In an effort to get students to think and to help evaluators distinguish students that memorize from students that think, the International Conference Future Scene applies only to a portion of the research available. Therefore, in IC competition, it is up to the students to analyze the Future Scene and determine what portion of their research is relevant and what is not. The best teams then apply relevant research to the specifics of the Future Scene.

**CONCLUSION**

Evaluation is a highly rewarding experience. Evaluators expend considerable mental energy during a day of evaluation; however, they are always re-energized and inspired by the ideas of creative students. Evaluation is the lifeblood of the Future Problem Solving Program, and the evaluator should take great pride in knowing your evaluation makes a significant contribution to FPSP and the hundreds of thousands of students who participate.
Future Problem Solving is a nationally recognized, award-winning program founded by the late Dr. E. Paul Torrance. The program seeks to increase awareness for the future and encourage creativity in students of all ages. The Kentucky Association for Academic Competition serves as the Affiliate Program for the International Future Problem Solving Program in Kentucky.

Designed as a year-long program, the Future Problem Solving Program (FPSP) focuses on research, problem solving, and communication skills. The program requires investigation, ingenuity and creativity, as well as cooperative group work.

Problem solving teams need appropriate guidance by a knowledgeable coach. Because students are the beneficiaries of this program, KAAC requires that the FPS coach be trained in the FPS process. The team coach can be a teacher, aide, administrator, parent, or other interested adult.

1. Participation Requirements
These rules impact participation in the Future Problem Solving component of Governor’s Cup.

a. **The school FPS coach must be certified before the FPS team can participate in District FPS competition.** If a school does not have a certified coach the team cannot participate in District competition. The coach does not have to be present at the District competition, but must meet the certification requirement.

b. **Each FPS team competing in District and Regional FPS competition must provide a certified evaluator.** Additionally, in the Middle Grades and High School grade levels, each team must supply one FPS evaluator for State Finals.

c. **Those attending FPS certification must return their completed booklet for certification within 2 weeks (14 days) after their certification date.** If they do not return their booklet within that time frame, they must repeat their certification clinic. All 2+ Certifications will have the 2 week (14 days) to complete the online test.

d. **No coach or immediate relative of an FPS team member may evaluate in his/her own District competition.** That person could, however, fulfill the participation requirement by evaluating in another District or grade level. In this scenario the coach or relative could “swap” with a coach or evaluator from another District.

e. Coaches or relatives may evaluate in Regional competition, because the booklets may be arranged so that evaluators do not evaluate their own team.

f. Schools within the same grade level may not share the same evaluator.

g. **FPS proctors may NOT evaluate the FPS competition.** If, before the awards ceremony, it is discovered that an FPS proctor served as evaluator, the FPS team that evaluator represents is disqualified and the evaluator’s scores disregarded. Contest Managers or their designees must obtain KAAC approval before such a disqualification is made.

h. **An FPS Team may not compete unless an adult accompanies the team to the competition.**

i. If a school fails to supply a certified evaluator and a certified coach, the FPS team cannot participate in the FPS component of Governor’s Cup.

j. Certification sessions will be offered at KAAC Conference or at local sites throughout the state from October through the first week of December. For those eligible for 2+ year certification, visit the searchable FPS certification database at [www.kaac.com](http://www.kaac.com) after you attend your session and successfully take the online quiz for your FPS certification number. Your FPS certification number will be posted in the database upon receiving an 80% on the quiz.

k. All other coaches and evaluators must attend one of the FPS certification sessions offered either at the KAAC Conference or throughout the state from October through the first week of December. A completed, scored booklet must be submitted within 14 days from the date of the certification session or the session MUST be repeated. If you attend a session scheduled in early December, no booklets will be accepted after December 13th for certification. To check the status of your certification number, visit [www.kaac.com](http://www.kaac.com).

l. FPS coaches and evaluators who work exclusively at the Elementary level of the FPS competition will not be eligible to score at the State Finals.

2. Overview of FPS Competition
In FPS, a four-person team participates in a six-step problem solving process to solve complex scientific and social problems of the future.

a. **The steps involved in the Future Problem Solving Process are:**
   - Research the topic
   - Read the Future Scene and identify the charge of the team
Step 1. Identify Challenges and Concerns  
Step 2. Select an Underlying Problem  
Step 3. Produce Solution Ideas  
Step 4. Generate and Select Criteria (for Solution Ideas)  
Step 5. Apply Criteria to Solution Ideas  
Step 6. Develop an Action Plan  

b. A practice problem is available upon request.  
c. Bibliographic information, activities, and additional details of the program can be found in the FPS Evaluation Manual.  
d. A member school may involve several "teams" or students in the practice problem. Suggested procedures for using Practice Problems may be found in the FPS Evaluation Manual.  
e. A different problem is presented at each tier of the Governor’s Cup.  
   i. Situations are appropriate to each grade level.  
   ii. Topic areas for District, Regional, and State Finals are announced, but the actual Future Scene for each grade level is not released until the competition.  
   iii. The 2018-2019 FPS topic areas for all three grade levels are:  

<table>
<thead>
<tr>
<th>Practice Problem</th>
<th>Mission to the Moon, Mars and Beyond</th>
</tr>
</thead>
<tbody>
<tr>
<td>District</td>
<td>Drones</td>
</tr>
<tr>
<td>Regional &amp; JR Qualifier</td>
<td>Food Loss and Waste</td>
</tr>
<tr>
<td>State Finals &amp; Individual FPS</td>
<td>Coping with Stress</td>
</tr>
<tr>
<td>International Conference</td>
<td>To Be Announced in March</td>
</tr>
</tbody>
</table>

3. FPS Competition Format  
a. Each member school may enter one team of four students in the FPS component of Governor’s Cup.  
   i. Exactly four students must compete at all times.  
   ii. Even though the coaches signify on their District Entry Form which students are to compete in FPS, substitutions are permitted prior to the start of any Governor’s Cup competition. No substitutions may be made once the competition begins.  
   iii. As long as students do not surpass the three-event limit at all levels of Governor’s Cup combined, coaches are free to make any substitutions they like at Regional or State. The same four students do not have to compete at each level.  

b. The exact starting time for District and Regional Future Problem Solving is not prescribed by KAAC, but decided upon by the coaches attending the Competition Planning Meeting.  
   i. Unless ALL participating schools agree to come during the day, the competition must be held after school hours, allowing all teams reasonable time to travel.  
   ii. All FPS teams must compete at the same time.  
   iii. At all levels, it may be possible to schedule FPS at the same time as composition. Refer to your Governor’s Cup Coaches’ Manual.  

c. Several District sites, as well as grade levels, can be combined at one location and coordinated by one individual. In this scenario of coordinating several Districts and grade levels, evaluators could be exchanged or mixed as long as there are equal numbers of FPS teams competing. FPS coaches or relatives of team members could evaluate because they are assigned to another District.  

d. FPS begins promptly at the local time agreed upon at the Competition Planning Meeting. When District or Regional competitions cross a time zone, the Central Time Zone will be used.  
   i. No student is admitted late to FPS, nor is a student dismissed early.  

e. Substitutions are allowed between District and Regional competition in all grade levels if the substitute’s name appears on the school’s District Entry Form. Participants’ names on the District Entry Form are also eligible substitutes between Regional and State Finals in the Middle Grades and High School grade levels.  

f. Teams must write in pencil in the booklets provided.  
   i. Teams may only write on the front of the pages of the competition booklet. No writing in the margins will be scored. No additional pages may be used. (Scrap paper is provided)  
   ii. Teams may take an unopened package of Post-It™ notes (or similar product) into the room, and use them instead of scrap paper. Highlighters are also permitted.  
   iii. If a team submits a booklet with cutting, pasting, or other alterations, that team is disqualified. Contest Managers or their designees must obtain KAAC approval before such a disqualification is made.  
   iv. Research notes or any other notes are not allowed in the competition room.
v. It is the Coach's responsibility to make sure team members are well versed in Governor's Cup rules. Do not allow a misinformed proctor or other official to give your team advice that will jeopardize its eligibility.

vi. If a student competing in a Governor's Cup event uses a cell phone or other electronic communication device during FPS, the team booklet is disqualified. If a student's device is put away, but creates a disturbance by ringing or vibrating, the device shall be confiscated and returned to the student after the competition.

g. **If students identify themselves or their schools in their booklet, the individual's team booklet will be disqualified.** Contest Managers or their designees must obtain KAAC approval before such a disqualification is made.

h. Teams in all grade levels may use a dictionary and/or thesaurus, book or electronic form, in the competition. Electronic spell checking devices are not permitted.
   i. Participating teams/schools provide their own dictionaries and/or thesauri. Such devices must be non-programmable and may not be of the type in which users can input and store information. Combination encyclopedia/dictionaries are prohibited.
   ii. Teams may not share a dictionary and/or thesaurus.
   iii. The host school is not required to provide dictionaries and/or thesauri.

i. Calculators are permitted in Future Problem Solving.
   i. Participating teams/schools provide their own calculators.
   ii. A calculator may not be shared among teams.
   iii. The host school is not required to provide calculators.
   iv. Programmable calculators, or those that can store information, may not be used.

j. All Elementary grade level teams receive the same predetermined Future Scene.
   i. The team has 90 minutes to complete the six steps in the FPS process.
   ii. A booklet identifying each step in the problem solving process is provided.

k. In the Middle Grades and High School grade levels, while the topics are the same, each grade level receives a unique Future Scene.
   i. The team has two hours to complete the six steps in the FPS process.
   ii. A booklet identifying each step in the problem solving process is provided.

l. Number, rather than name, identifies teams.
   i. At registration, each team receives a paper bearing a code number corresponding to the code on the FPS sign-in form.
   ii. The team writes the code number on the first page of the booklet ONLY.
   iii. Following evaluation, the code number on the booklet is matched to the team name.

m. To allow teams to prepare for the Regional and State Finals competitions, the Contest Manager or FPS Coordinator returns all FPS scoresheets to the respective teams, and identifies the teams advancing to the Regional or State Finals competition the Monday following the originally scheduled District or Regional Governor's Cup Awards Ceremony. The teams are told whether or not they are advancing, not the exact order of finish. Exact order of finish is not announced until the FPS awards are presented at each respective awards ceremony.

n. KAAC encourages host schools to place FPS teams in one large competition room, rather than in separate rooms.

4. **Evaluation**

Evaluation is written feedback and scoring that helps coaches and students improve their skills as problem solvers.

**Guidelines for Scheduling Evaluation**

a. KAAC does not impose a set time for evaluation. The Contest Manager sets evaluation times in consultation with evaluators at times that are reasonably convenient for both parties.

b. If the same person is designated to evaluate FPS is to serve also as Composition reader, that person is prohibited from scoring both events in the same day at District and Regional. At the State Finals, the same person may NOT score FPS and Composition.

c. FPS evaluation MUST be completed by noon on Saturday.

d. The number of evaluators used must always equal the number of FPS teams participating.

e. Not all evaluators need to be present at the same time, but evaluation should be completed in a continuous sitting for the respective evaluator.

f. Booklets must be evaluated on-site or a site determined and overseen by the FPS Coordinator.
g. It is against KAAC rules for FPS evaluators or Composition readers to take booklets off-site to score without express permission from KAAC. If they do so, both the host school and those evaluators or readers are subject to disciplinary action from KAAC. KAAC’s disciplinary action could include, but is not limited to, suspending that evaluator/reader from future service and/or placing the host school on probation.

**Evaluation—Process and Results**

h. The FPS Coordinator or the Contest Manager must check and sign the scoresheet before it is considered valid.

i. If an evaluator serves for two different grade levels, the evaluator could read two sets of booklets in a combined District competition, but not on the same day.

j. Each step of the FPS process is evaluated and receives a numerical score.
   i. Each evaluator then ranks their respective sample of booklets based on the numerical scores awarded.
   ii. The booklet receiving the highest total numerical score is ranked one; the booklet receiving the next highest score is ranked two; etc.
   iii. The ranks of each judge are combined to determine the order of finish. The lowest composite rank places first; the next lowest rank places second, etc.
   iv. ASAP (the scoring program) has been designed to modify an outlying score, which may negatively affect the team’s ranking that is not consistent with other evaluator rankings.

k. If the composite (total) ranks of booklets are tied, ties are broken by employing judges’ preference by ASAP.

l. There is no inquiry procedure in FPS competition. If a coach feels than an evaluator shows significant errors in evaluation, the coach may request that the booklet and evaluation scoresheet be examined by KAAC. Should KAAC agree, the evaluator will undergo remediation before FPS certification may be renewed.

m. The FPS Coordinator and head scorer, or other individual designated at the Competition Planning Meeting, examines FPS scoresheets to verify team codes, points awarded, and ranking.

n. A renewed effort must be made to correct mathematical errors on FPS scoresheets. The FPS and Composition Coordinator should be certified in FPS and knowledgeable about FPS scoring. The person must check the FPS scoresheets for mathematical mistakes using the directives found in the Coordinator’s Guide. If a certified FPS person is not available to serve as the Coordinator, either the Head Scorer, Chief Official, or a certified FPS coach chosen by the coaches at the Competition Planning Meeting will check the scoresheets for errors. Whenever two or more people are involved in error-checking, they must be from different schools.

o. Pre-scoring of Middle Grades and High School Region Steps 2, 4 and 5 of the FPS booklet will be completed by KAAC FPS Trainers. Three FPS State Trainers will be assigned to pre-score each region. They will determine scores and those scores will be returned to the FPS and Composition Coordinator to be distributed to the FPS evaluators with the assigned booklets to be scored and must be adopted by the regional evaluators as mandated scores.

5. Recognition and Advancement

   In District competition the top two teams in all grade levels receive medals and advance to Regional competition.
   a. At the Regional competition, the top four Regional FPS teams in all grade levels receive medals. The top two Regional FPS teams in the Middle Grades and High School grade levels advance to the State Finals.
   b. At the State Finals, the top 10 teams in both the Middle Grades and High School grade levels are recognized and receive awards.
   c. School points are awarded based on the order of finish.
   d. Kentucky’s Middle Grades and High School Governor’s Cup teams advancing to the International Future Problem Solving Conference (IC), a competition involving FPS affiliate program champions from the United States and several foreign countries, will be based on the total number of participating teams from each affiliate program.
Supplemental Resources

GLOSSARY OF TERMS
CATEGORY LIST
2018-19 TOPIC DESCRIPTORS
2018-19 SUGGESTED READINGS
PCA FORMS
### Future Problem Solving Glossary

**25% RULE** *(Step 3)*)

If the UP is a Restatement; is Circular; or uses an Absolute Verb; is Unrelated to or Ignores the Future Scene; or is Without a Purpose, the team may receive credit for maximum of 25% of the possible total solutions for each division.

**Absolute Verb** *(Step 2)*

Absolute verbs are restrictive mandates that lack flexibility and limit the creation of varied solutions (Step 3). **Solutions will either solve perfectly or not at all.** Absolute verbs offer NO flexibility in the action to be taken. The 25% Rule is applied when scoring solutions. This will also impact scores given in Steps 4 & 6.

**Action Plan (AP) or Final Plan of Action** *(Step 6)*

Proposal for solving the **Underlying Problem (UP).** The basis comes from the highest scoring solution from Step 5 but is now expanded to explain in detail the who, what, how, why, where, and when of the solution idea. Will most often consist of three or more paragraphs, but may be presented in a unique format. This is the culminating work of the Future Problem Solving booklet.

**Adequacy** *(Step 2)*

Assesses the importance of the problem area used in the UP. Measures the significance or merit of the UP to be solved.

**Booklet**

The set of sheets provided to the Future Problem Solving team on which to complete the FPS process.

**Category** *(Steps 1 & 3)*

A list of 18 different topics that are used to assist students to generate ideas from a variety of sources.

**Cause/Effect**

Reasons the problems may be occurring in the Future Scene.

**Certification**

Each team in Governor’s Cup must have two (2) people certified for the District competition: Coach and Evaluator (MUST NOT be the same person)

**Certification—Length of Years**

<table>
<thead>
<tr>
<th>Years Certification</th>
<th>Expires after 1 year of certification</th>
<th>Expires after 2 years of certification</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>First year of FPS Certification</td>
<td>Attend an FPS clinic and returning a scored Booklet for Certification within 14 days of the clinic.</td>
</tr>
<tr>
<td>1</td>
<td>Second year of FPS Certification</td>
<td>Attend an FPS clinic and returning a scored Booklet for Certification within 14 days of the clinic.</td>
</tr>
<tr>
<td>2+</td>
<td>Third year of FPS Certification</td>
<td>Attend an FPS clinic and pass an online quiz within 14 days of the clinic. <strong>Does NOT require renewal next year.</strong></td>
</tr>
</tbody>
</table>

**Challenge or Concern** *(Step 1)*

A challenge is an issue, concern, or problem that needs attention or consideration, which relates to the **Future Scene.**

**Championship Round of State Finals**

Final round of scoring Middle Grades and High School booklets to determine the final order of the top 5 places in Governor’s Cup.

**Charge**

Directive, found in **Future Scene** for the purpose of attacking the areas of concern.

**Circular UP** *(Step 2)*

**Purpose** repeats either the CP and/or KVP. This repetition may be contextually the same (verbatim) or a paraphrasing carrying the same meaning. The 25% Rule is applied when scoring solutions. This will also impact scores given in Steps 4 & 6.

**Clarity** *(Step 1)*

A score to evaluate the description of the challenges identified. Challenges that are clearly worded shows effective clarity in Step 1.

**Coach**

Certified in FPS to have a team eligible in Governor’s Cup.

**Component Events**

KAAC sponsored events that are not associated with the Governor’s Cup competition. These events include JR Division FPS, Individual FPS, Scenario Writing, Scenario Performance, and Community Problem Solving-Team or Community Problem Solving-Individual.

**Condition Phrase (CP)** *(Step 2)*

A lead-in phrase that describes the situation in the Future Scene that is the basis for the challenge chosen in the **Underlying Problem (UP).**

**Correctly Written** *(Step 4)*

Structural elements of criteria in Step 4. Must contain 3 elements to receive credit for being written correctly: a single dimension, uses a superlative, desired direction/outcome.

**Creative Strength** *(Overall)*

Assesses the overall creative productive thinking in the booklet.

**Criteria** *(Steps 4 & 5)*

Questions used by the team to evaluate solution ideas. Criteria should focus on a single dimension, has a superlative, indicate the desired direction and be recognizable as a question. Criteria may be classified as **Generic** or **Specific.**

**Criteria in the Development of the Action Plan**

Assesses the degree of the Criteria written in Step 4 and the relevance it has on the best solution used in the Action Plan.
**Critical Error**  
(Steps 2, 3, 4 and 6)  
If the UP is a **Restatement**; is **Circular**; or uses an **Absolute Verb**; or is **Without a Purpose**, the team may receive credit for **maximum of 25% (25% Rule)** of the possible total solutions for each division. The 25% Rule is applied when scoring solutions. This will also impact scores given in Steps 4 & 6.

**Definitive Statements:**  
(Step 3)  
Correct form for writing Step 3 solution ideas. Solutions written using probability statements that include such words as “may”, “might” or “could” may only receive credit for up to three (3) different solutions.

**Development of Action Plan:**  
(Step 6)  
Measures the degree to which the team creates a strategy for addressing the UP. A full description of the solution idea from Step 3 scoring the highest in Step 5 Grid from the Criteria written in Step 4. Go beyond the description in Step 3 to include who, what, why, how, where, when and any obstacles that may interfere with carrying out the solution.

**Duplicate:**  
(Steps 1 and 3)  
In Step 1, any challenge that is too contextually similar to a previously scored challenge that was scored as a **Yes**.  
In Step 3, any solution that is too contextually similar to a previously scored solution idea that was scored as **Relevant**. **No credit is awarded for a challenge or solution that is a duplicate of another.**

**Duplicate:**  
(Step 4)  
A criterion that is a duplicate of another. **No credit is awarded for a criterion that is a duplicate of another.**

**Future Problem Solving (FPS) – Team:**  
Competition in which four students are given a **Future Scene** and a **booklet** which is to be completed within a specified time constraint. Their charge is to problem solve by identifying **challenges** and **solutions** in order to solve the situation presented in the Future Scene.

**Effectiveness:**  
(Step 6)  
Measures the potential of the AP in relation to the goals stated in the UP. Asks whether the UP successfully solves the UP. **Critical Error in writing the UP causes this score to have the 25% Rule applied.**

**Elaboration:**  
(Step 3)  
Any relevant solution that includes at least three answers to the four questions: who, what, why and how. Any solution written by tacking on the KVP and/or Purpose will NOT be considered for elaboration credit after it has been done three (3) times in Step 3.

**Evaluator**  
A person who has received an FPS certification Number by attending an FPS Certification Clinic and completing the certification requirements. Restrictions for evaluators are listed on page 1 of the **FPS Evaluation Manual**.

**Feedback**  
A requirement of all FPS evaluators when scoring FPS Booklets. The **FPS Evaluation Manual** includes the guidelines for scoring competitive booklets.

**Flexibility:**  
A numerical score based on the number of categories identified within the challenges in Step 1 and the solutions in Step 3. For Middle Grades and High School divisions, the Flexibility has a range of scores that corresponds to the score awarded. Elementary division has a one-to-one ratio up to the maximum number awarded.

**Fluency:**  
(Steps 1 and 3)  
Numerical score based upon the number of challenges identified as a **YES** in Step 1. Numerical score based upon the number of solution identified as Relevant in Step 3. For Middle Grades and High School divisions, the Fluency has a range of scores that corresponds to the score awarded. Elementary division has a one-to-one ratio up to the maximum number awarded.

**Focus:**  
(Step 2)  
Identifies a manageable area of concern in which solution ideas can be developed. UP should be a smaller part of the entire Future Scene. Should narrow the Future Scene without trivializing it.

**FPS Evaluation Manual Supplement**  
A copy of a typed FPS booklet consisting of Middle Grades student work. Available at the FPS Certification clinic.

**Future Problem Solving – Individual:**  
Component Event Competition in which one student is given a **Future Scene** and a **booklet** to be completed within a specified time constraint. The IND FPS’s charge is to problem solve by identifying challenges and solutions in order to solve the situation presented in the Future Scene.

**Future Scene (Fuzzy) (FS):**  
A hypothetical, what if, scenario based on current information or ideas. Also known as a “Fuzzy”. 

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| **Future Scene Parameters (FSP): (Step 2)** | Elements that place the **Underlying Problem** within the parameters of the **Future Scene**, including time, place, and topic. Could be described as the setting of the **Underlying Problem**. |
| **Futuristic Thinking: (Overall)** | Assesses the ability to work within the timeframe of the Future Scene and extrapolate relevant trends and technologies from the research. Does not mean... |
| **Fuzzy (Future Scene, or FS):** | See **Future Scene (FS)**. |
| **Generic: (Steps 4 & 5)** | **Criteria** are relevant in measuring concerns to most any problems; nonspecific to **Future Scene, Underlying Problem (UP), or Solutions**. |
| **Grid: (Steps 4 & 5)** | Table used in evaluation of **solution ideas**, solution receiving highest score in "grid" must be used for **Action Plan** in Step 6. |
| **How: (Steps 3 and 6)** | Solution idea does not have a clear connection or clear tie to the goals of the UP or the statement does not identify a solution idea. **No credit is awarded for if scored as a How.** |
| **Humaneness: (Step 6)** | Measures the productive, positive potential of the AP as opposed to its destructive, negative potential. |
| **Impact: (Step 6)** | Measures the positive impact of the AP on the Focus of the Future Scene. |
| **Imposed—No Purpose (Step 2)** | A part of the **Underlying Problem** written with **brackets [ ]** by the evaluator in the team booklet when the team does not write a Purpose. A logical connection **MUST** be made between the **Condition Phrase** and the **KVP** and to the Future Scene Parameters to be considered as an acceptable/logical Imposed Purpose. If a logical connection is not evident, the then Purpose is left blank. **The 25% Rule is applied when scoring solutions. This will also impact scores given in Steps 4 & 6.** |
| **Key Verb Phrase (KVP): (Step 2)** | One key verb in a phrase connected with only one object or modifier that mandates what will be done to solve the **Underlying Problem (UP)**. The Key Verb Phrase will occur most often just after the **Stem**. |
| **Mandatory Adoption of Scores in Steps 2, 4 and 5 for MG and HS** | The Regional MG and HS division FPS and Composition Coordinator sends the pages containing Steps 2, 4 and 5 of each booklet to the Program Director at KAAC. These steps are pre-scored by KAAC trainers and sent back to the coordinator to be included in the packets with numbers of the booklets to be scored by each evaluator. The scores for these steps MUST be verified by the FPS and Composition Coordinator before the evaluators leave the building after scoring has been completed. |
| **No Purpose (Step 2)** | Critical part of the **Underlying Problem** not written by the team. Leaving out the Purpose causes the team to not have a stated goal to accomplish. **The 25% Rule is applied when scoring solutions. This will also impact scores given in Steps 4 & 6.** |
| **Originality: (Steps 1 and 3)** | Especially insightful, rare or creative thinking that receives a **YES** as a challenge in Step 1. Especially insightful, rare or creative thinking that receives credit for being a Relevant solution in Step 3. |
| **PCA (Paired Comparative Analysis)** | Head-to-head comparison of booklets advancing to the PCA Round of scoring in Middle Grades and High School Divisions from Round One. |
| **PCA Round of State Finals** | Scoring procedure to determine 6th-10th places in Middle Grades and High School Divisions |
| **Penalty:** | Mandate score for any critical mistake in the FPS process. |
| **Perhaps: (Steps 1 and 3)** | Is ambiguous or true intent cannot be determined, or worded poorly—unclear in Step 1. **No clear connection to the stated goal in the UP; is worded poorly or ambiguous in Step 3. **No credit is awarded for either Step if scored as a Perhaps.** |
| **Population: (Steps 2, 4 and 6)** | The Future Scene is written about a specific individual or group of people (stakeholder/s). The community in which the Future Scene was written may or may not be the correct population or stakeholders. |
| **Pre-scoring of Steps 2, 4 and 5** | Performed by KAAC FPS Trainers for Middle Grades and High School Region and Middle Grades and High School State Finals to assist with scoring consistency. Pre-scores must be adopted by FPS Evaluators |
| **Probability Statement:** | Correct form for writing Step 1 challenges. Challenges written using definitive forms such as “will” may only receive credit for up to three (3) different challenges. |
| **Purpose (P): (Step 2)** | The outcome or goal expected from the directive set forth by the **Key Verb Phrase (KVP)**. |
| **Qualitative Score:**  
| (Step 2) | Measures the quality of the UP written in the booklet. See **Focus** and **Adequacy**. |
| **Relevance:**  
| (Steps 4 & 5) | Measures the merit or value of each criterion in relation to **Solution** statements. |
| **Relevance:**  
| (Step 6) | Measures the extent to which the AP is relevant to the UP. Asks whether the UP addresses the UP. Critical Error in writing the UP causes this score to have the 25% Rule applied. |
| **Relevant:**  
| (Step 3) | Definitive statement written as a solution idea that achieves the goal of the UP. Addresses the issues of the CP, answers the KVP and supports the Purpose and occurs within the Future Scene Parameters. |
| **Research Applied:**  
| (Overall) | Measures use of applicable research on the topic in the booklet. Students can also show research by showing knowledge of issues and trends. |
| **Restatement:**  
| (Step 2) | A revision of the intent of the charge that does not narrow the topic, or a summary of the entire Future Scene or Topic. This may or may not be verbatim. |
| **Scoresheet** | Simplified rubric designed to score FPS booklets from the **FPS Evaluation Manual**. |
| **Solution:**  
| (Step 1) | An incorrectly written statement for Step 1. A response that suggests how to solve challenges of the Future Scene is denying an important element of the Future Problem Solving process. If definitive statements using will are used in more than three YES challenges, credit may be awarded to only three (3). |
| **Solution:**  
| (Step 3) | Proposal idea that are stated in definite terms that solve the **Key Verb Phrase (KVP)** and make a connection to the **Purpose**. |
| **Stakeholders:**  
| (Steps 2, 4 and 6) | The Future Scene is written about a specific individual or group of people (stakeholder/s). The community in which the Future Scene was written may or may not be the correct population or stakeholders. |
| **Specific:**  
| (Steps 4 & 5) | Criteria specific to any part of the **Underlying Problem (UP)** which is within the Future Scene parameters. They show greater insight and are more effective in evaluating the solution idea that is the best to use for the **Action Plan**. |
| **Stem (S):**  
| (Step 2) | Use of the phrase, "How might we"(HMW) OR "In what ways might we"(IWWMW), in the **Underlying Problem (UP)**. |
| **Step** | A unique section in the Future Problem Solving process with requirement specific to each of the six steps and the Overall scores. |
| **Structure:**  
| (Step 2) | Assessment of the composition of the UP. Must contain five (5) elements to receive full credit. Condition Phrase, Stem, single Key Verb Phrase, single Purpose and three (3) Future Scene Parameters of topic, time and place. |
| **Structure:**  
| (Step 4) | See Correctly Written. |
| **Topic:** | Released subjects that allow students to research and prepare for the **Future Problem Solving** competitions. |
| **Time:** | The period of time the Future Scene is written about which is usually at least 20 years into the future. |
| **Underlying Problem (UP):**  
| (Step 2) | Challenge that identifies and states a very important issue within the **Future Scene** to solve. The **UP** is made up of the following components: Condition Phrase, Stem, Key Verb Phrase (KVP), Purpose and Future Scene Parameters. |
| **UP-based criterion** | A criterion that is based on the ideas from the Underlying Problem with a tie to the Condition Phrase, KVP or Purpose. |
| **Why:**  
| (Steps 1, 3 and 6) | No clear connection to the Future Scene in Step 1. No clear connection to the stated goal in the UP; is worded poorly or ambiguous in Step 3. **No credit is awarded for either Step if scored as a Perhaps.** |
| **Yes:**  
| (Step 1) | Probability statement that identifies a problem or concern occurring within the Future Scene and the Future Scene Parameters. See **Probability Statement** or **Challenge**. |
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
**Mission to Moon Mars and Beyond—Practice Problem Non-competitive Topic**

A spacecraft in orbit? A biosphere on extraterrestrial ground? Private and governmental organizations are already planning missions to set up research stations or even colonies on the Moon and Mars. Many see opportunities to learn more about our solar system, leading to a better understanding of Earth and ourselves; others question whether such missions are even feasible. One private agency is already seeking volunteers for a Mars mission. Space ventures provide an impetus for advancing knowledge and technologies with applications in space, as well as on Earth. Entrepreneurial and scientific opportunities abound to explore, to mine, and to engineer under distinct conditions. Pioneers will need to plan for a sustainable long-term stay, which will require vast investments of people, money, and other resources.

What challenges await these missions: funding, survival in the challenging physical and psychological conditions, law, government and politics? Will they ever return to Earth or will colonies expand and eventually become new civilizations? Will the missions bring humans together toward a common goal or create a global race to establish competing bases? Is this the next giant leap for humankind?

**Drones—Governor’s Cup District Competitions**

Drones are among the most hyped products for aviation enthusiasts in recent years. Although originally developed for military use, drones or Unmanned Aerial Vehicles (UAVs) can be cool gadgets used for recreation. They can also be powerful tools for commerce, scientific research, agriculture, entertainment, photography, transportation, disaster relief, search and rescue, surveillance, and policing. UAVs can carry payloads and can be controlled remotely by a human operator or by an onboard computer. Basic drone models can be operated with little skill or training. Regulations on the use of UAVs are already in place in nations around the world, but technological advancements and expanded applications may outpace their regulation. While UAV use is growing exponentially, concerns are also escalating. Privacy intrusion, airspace violation, criminal use, surreptitious military operations, accidental crashes, terrorist threats, and other issues have raised alarms.

What does the future hold for UAV technological advancements and accessory enhancements? Will access to UAVs be equitable? How will the pending prevalence of drones in our daily lives affect society overall, especially in areas of personal rights and safety?

**Food Loss and Waste—Governor’s Cup Regional Competitions; JR Division Qualifier**

Hunger remains a concern in the developing world, and the resources required for food production are limited. About one-third of food produced globally is lost or wasted, leaving millions of people hungry and valuable resources squandered.

Food loss refers to a decrease in food for human consumption during production, post-harvest, and processing stages. Causes include poor harvesting techniques, weak infrastructure (markets, transportation, storage, cooling, packaging), contamination (bacteria, fungus, insects), and corruption. In addition to reduced availability, food loss contributes to higher costs, hurting farmers as well as those who cannot afford to buy their food.

Food losses that occur at retail and consumption stages are called food waste and refer to behaviors such as discarding edible food. Quality standards based on perfect appearance, misused “best-before-dates,”
and careless consumer attitudes contribute to waste. Food waste is more common in the industrialized world, while food loss is a greater concern in developing nations.

Can food loss prevention combat hunger and raise incomes in developing nations? Can food waste be decreased without sacrificing quality or safety? What roles might technology or regulations serve? What are the economic, environmental, psychological, and societal implications? Can we improve global food security while meeting the needs of diverse consumers?

Coping with Stress—State Finals: Governor’s Cup, JR Division, Individual

With exponential change and fast-paced trends in society comes an increase in stress. Stress can be physical, mental, or emotional. Living conditions, as well as societal and personal expectations, can lead to higher levels of stress-related hormones. In some parts of the world, people find it difficult to cope with longer work hours and less leisure time as they attempt to meet society’s perceived expectations. Social media is a constant presence, delivering both subtle and overt pressures.

Most people experience stress, but individuals respond differently. Stress can be a useful motivator in the face of challenges or danger, but negative impacts can result from excessive stress. Medical and psychological problems can emerge or be exacerbated. Scientific data show that physical activity and relaxation techniques are samples of ways to reduce these negative impacts.

What are the personal and societal impacts of stress? Do different countries and cultures deal with stress the same way? How can we promote healthier lifestyles that help people to cope with stress?
### Mission to the Moon, Mars, and Beyond

**Practice Problem Topic**
**Mission to Moon, Mars, and Beyond**

**Suggested Readings**


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**Caution: We strongly advise coaches to screen all publications prior to making them accessible to students.**
**Governor’s Cup District Topic**  
**Drones**  
**Suggested Readings**

**Drones**


[https://www.pcmag.com/article2/0,2817,2491507,00.asp](https://www.pcmag.com/article2/0,2817,2491507,00.asp)

[http://www.wired.co.uk/article/security-counter-drones-criminals-terrorists](http://www.wired.co.uk/article/security-counter-drones-criminals-terrorists)


Ong, T. (2017, October 4). This intriguing drone concept drops packages straight into your hands. *The Verge.*  

[https://www.wired.com/story/guide-drones/](https://www.wired.com/story/guide-drones/)


**Caution:** We strongly advise coaches to screen all publications prior to making them accessible to students.
Food Loss & Waste


Caution: We strongly advise coaches to screen all publications prior to making them accessible to students.
Coping with Stress—State Finals: Governor’s Cup, JR Division, Individual


O’Connor, S. (2017, December 4). Driven to despair—the hidden costs of the gig economy. Financial Times. https://www.ft.com/content/749cb87e-6ca8-11e7-b9c7-15af748b60d0


Caution: We strongly advise coaches to screen all publications prior to making them accessible to students.
For each comparison write the number of the booklet against which this booklet is compared in the space provided. After the PCA has been completed, check the appropriate box stating whether this booklet scored higher or lower than the booklet to which it was compared.

Comparison Rounds are listed to help identify beginning and final placement.

<table>
<thead>
<tr>
<th>Comparison Round #</th>
<th>Your booklet scores</th>
<th>Higher</th>
<th>Lower</th>
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<tbody>
<tr>
<td>1. Compared to booklet #</td>
<td>Your booklet scores</td>
<td>Higher</td>
<td>Lower</td>
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<td>8. Compared to booklet #</td>
<td>Your booklet scores</td>
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<td>2. Compared to booklet #</td>
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<td>9. Compared to booklet #</td>
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<td>3. Compared to booklet #</td>
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**FINAL RANK OF THIS BOOKLET**

Rank ____________ of ____________
**Paired Comparison Analysis**

**Form 1**

Compare the individual steps of each booklet. For each step, assign the better booklet a score of 1 if it is slightly stronger, and a score of 2 if it is definitely stronger in that step. Multiply the score by the factor listed for each step and write that number in the blank. If the booklets are of the same strength for a particular step, write “0” in the blank. Total the scores. The booklet with the higher total score is compared to the next booklet in the sample. Write the number of the advancing booklet in the space provided. Write the number of the comparison in the space provided. For example, if this is the first comparison in the round, write “1.”

Circle division: J  M  H  Comparison # __________

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Total Score ________

Total Score ________

Advancing Booklet: _________
Calendar and Deadlines for Governor’s Cup & FPS Component Events

If you disregard these deadlines, you may make your team ineligible for some or all Governor’s Cup events.

Elementary Governor’s Cup
ASAP Online Student Entry Period – Dec. 12 to Jan. 28
Deadline for Sending FPS Booklets to KAAC to Request Official or Coach Certification Numbers – Dec. 12
Deadline for Entering Student Names Online – Monday, January 28
Deadline to for District Host to receive District Entry Form – January 28
District–Coaches’ Planning Meeting - Thursday, January 31
District--Future Problem Solving and Composition - Tuesday, February 5
District--Assessment, Quick Recall, Awards - Saturday, February 9
Deadline for Confirming Students for Regional Online - Midnight Wed., February 13
Regional--Coaches’ Planning Meeting - Thursday, February 21
Regional--Future Problem Solving and Composition - Monday, February 25
Regional—Assessment, Quick Recall, Awards - Saturday, March 2

Middle Grades Governor’s Cup
ASAP Online Student Entry Period – Dec. 12 to Jan. 9
Deadline for Sending FPS Booklets to KAAC to Request Official or Coach Certification Numbers – Dec. 12
Deadline for Entering Student Names Online - Wednesday, January 9
Deadline to for District Host to receive District Entry Form –January 9
District--Coaches’ Planning Meeting - Thursday, January 10
District--Future Problem Solving and Composition - Tuesday, January 15
District--Assessment, Quick Recall, Awards - Saturday, January 19
Deadline for Confirming Students for Regional Online - Midnight Wednesday, January 23
Regional--Coaches’ Planning Meeting - Thursday, January 24
Regional--Future Problem Solving & Composition - Monday, January 28
Regional—Assessment, Quick Recall, Awards - Saturday, February 2
Governor’s Cup State Finals- March 16-18, Galt House, Louisville

High School Governor’s Cup
ASAP Online Student Entry Period – Dec. 12 to Jan. 16
Deadline for Sending FPS Booklets to KAAC to Request Official or Coach Certification Numbers – Dec. 12
Deadline for Entering Student Names Online – Wednesday, January 16
Deadline to for District Host to receive District Entry Form –January 16
District--Coaches’ Planning Meeting - Thursday, January 17
District--Future Problem Solving and Composition - Tuesday, January 22
District--Assessment, Quick Recall, Awards - Saturday, January 26
Deadline for Confirming Students for Regional Online - Midnight Wednesday, January 30
Regional--Coaches’ Planning Meeting - Thursday, February 7
Regional--Future Problem Solving & Composition - Monday, February 11
Regional—Assessment, Quick Recall, Awards - Saturday, February 16
Deadline for Confirming Students for State Online - Midnight Wed., Feb. 20
Governor’s Cup State Finals - March 16-18, Galt House, Louisville

Other KAAC FPS Component Events
Deadline to Register for FPS Junior Division – Monday, November 5, 2018
FPS Junior Division Qualifying Competition- Thursday, December 6, 2018
Deadline for Intent to Submit and to Register CmPS Team and Individual - Saturday, December 15, 2018
Deadline to Register for Scenario Writing with Submissions– Friday, January 4, 2019
Deadline to Register Scenario Performance – Friday, January 11, 2019
Deadline for Progress Report CmPS Team and Individual- Friday, January 18, 2019
Deadline for Scenario Performance to KAAC Office- Saturday, February 2, 2019
Deadline for Final CmPS Project to KAAC office- Friday, February 22, 2019
Deadline to Register for Individual FPS Competition—March 8, 2019

State Participants in Junior FPS- Saturday, March 16, 2019, Galt House, Louisville
CmPS Presented at State- Requires confirmation of date and time by KAAC Program Director, Galt House, Louisville
Junior Division FPS Awards, Scenario Writing Awards, Scenario Performance Awards, CmPS Awards Presented at State – Monday, March 18, Galt House, Louisville