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Introduction

Career and Technical Education (CTE) – Washington believes a comprehensive education culminates in 21st century readiness for college, careers and civic responsibility. We believe in students prepared to flourish in a dynamic, global economy. State CTE courses exemplify the intentional synthesis of technical knowledge and skills, traditional academics, and 21st century skills as outlined by the Partnership for 21st Century Skills.

The purpose of this document is to provide career and technical educators with a resource to assist them in assuring 21st century skill development is an integral part of every CTE program’s curriculum. This field guide and related publications are designed to help the CTE instructor plan and deliver quality 21st century learning to all students.

Many CTE instructors find CTSO resources to be valuable tools in delivering 21st century skills. In the event that a district program does not utilize materials and activities provided by a state-recognized CTSO, a local district must provide 21st century skill development at a standard equivalent to the relevant CTSOs. We encourage all CTE instructors to consider incorporating a CTSO into their programs if they have not done so already. CTSOs have excellent 21st century skill resources any instructor may regardless of their involvement in the organization.

Leadership development has been an integral component of CTE courses in Washington for decades. The leadership skills learned in extra and co-curricular activities makes an enormously positive impact on the lives of students. Leadership activities have long been one of the items that make CTE courses different (and more valuable) from other courses. CTE has a commitment to continual improvement and continual transformation of programs to meet the changing needs of employers.

The previous Leadership and Employability Skills Standards for Washington State CTE were developed in 2003, based upon the Secretary’s Commission on Achieving Necessary Skills (SCANS) final report released in 1992. In the nineteen years since the release of the SCANS report, fundamental changes in the economy, jobs and businesses have reshaped the nature of work. The industrial economy based on manufacturing has shifted to a global service economy, including information services, new and emerging industries. Advanced economies demand workers able to respond to complex problems, communicate effectively, manage information, work in new teams, produce new knowledge, invent and create. Twenty-first century skills align to and expand upon the Leadership and Employability Skills Standards, and increase the rigor and relevance of leadership and employability integration in CTE courses. To learn more about the Partnership for 21st Century Skills initiative, which developed the 21st Century Skills standards visit www.21stcenturyskills.org.
21st Century Skills Key Subjects and Themes
Mastery of academic core subjects, along with contemporary interdisciplinary themes, are essential for all students, in addition to 21st Century Skills. Below are lists of key subjects and themes.

Core subjects include:
- English, Reading or Language Arts
- World Languages
- Arts
- Mathematics
- Economics
- Science
- Geography
- History
- Government and Civics

Contemporary themes include:

Global Awareness
- Using 21st century skills to understand and address global issues.
- Learning from and working collaboratively with individuals representing diverse cultures, religions and lifestyles in a spirit of mutual respect and open dialogue in personal, work and community contexts.
- Understanding other nations and cultures, including the use of non-English languages.

Financial, Economic, Business and Entrepreneurial Literacy
- Knowing how to make appropriate personal economic choices.
- Understanding the role of the economy in society.
- Using entrepreneurial skills to enhance workplace productivity and career options.

Civic Literacy
- Participating effectively in civic life through knowing how to stay informed and understanding governmental processes.
- Exercising the rights and obligations of citizenship at local, state, national and global levels.
- Understanding the local and global implications of civic decisions.

Health Literacy
- Obtaining, interpreting and understanding basic health information and services and using such information and services in ways that enhance health.
- Understanding preventive physical and mental health measures, including proper diet, nutrition, exercise, risk avoidance and stress reduction.
- Using available information to make appropriate health-related decisions.
- Establishing and monitoring personal and family health goals.
- Understanding national and international public health and safety issues.

Environmental Literacy
- Demonstrating knowledge and understanding of the environment and the circumstances and conditions affecting it, particularly as relates to air, climate, land, food, energy, water and ecosystems.
• Demonstrating knowledge and understanding of society’s impact on the natural world (e.g., population growth, population development, resource consumption rate, etc.)
• Investigating and analyze environmental issues, and make accurate conclusions about effective solutions.
• Taking individual and collective action towards addressing environmental challenges (e.g., participating in global actions, designing solutions that inspire action on environmental issues).

It is expected that over a student's CTE career they will learn all of these standards. It is up to each district and instructor to determine where these standards will be learned, how they will be learned and how they will be assessed.
21st Century Skills

Below are the 21st Century Skills. Where annotated, there are activities for many of the competencies. See pages following.

LEARNING AND INNOVATION SKILLS
Learning and innovation skills increasingly are being recognized as those that separate students who are prepared for a more and more complex life and work environments in the 21st century, and those who are not. A focus on creativity, critical thinking, communication and collaboration is essential to prepare students for the future.

1. Creativity and Innovation
   A. Think Creatively
      1. Use a wide range of idea creation techniques (such as brainstorming)
      2. Create new and worthwhile ideas (both incremental and radical concepts)
      3. Elaborate, refine, analyze and evaluate their own ideas in order to improve and maximize creative efforts
   B. Work Creatively with Others
      1. Develop, implement and communicate new ideas to others effectively.
      2. Be open and responsive to new and diverse perspectives; incorporate group input and feedback into the work.
      3. Demonstrate originality and inventiveness in work and understand the real world limits to adopting new ideas.
      4. View failure as an opportunity to learn; understand that creativity and innovation is a long-term, cyclical process of small successes and frequent mistakes.
   C. Implement Innovations
      1. Act on creative ideas to make a tangible and useful contribution to the field in which the innovation will occur.

2. Critical Thinking and Problem Solving
   A. Reason Effectively
      1. Use various types of reasoning (inductive, deductive, etc.) as appropriate to the situation.
   B. Use Systems Thinking
      1. Analyze how parts of a whole interact with each other to produce overall outcomes in complex systems.
   C. Make Judgments and Decisions
      1. Effectively analyze and evaluate evidence, arguments, claims and beliefs.
      2. Analyze and evaluate major alternative points of view.
      3. Synthesize and make connections between information and arguments.
      4. Interpret information and draw conclusions based on the best analysis.
      5. Reflect critically on learning experiences and processes.
   D. Solve Problems
      1. Solve different kinds of non-familiar problems in both conventional and innovative ways.
      2. Identify and ask significant questions that clarify various points of view and lead to better solutions
3. Communication and Collaboration
   A. Communicate Clearly
      1. Articulate thoughts and ideas effectively using oral, written and nonverbal communication skills in a variety of forms and contexts.
      2. Listen effectively to decipher meaning, including knowledge, values, attitudes and intentions.
      3. Use communication for a range of purposes (e.g. to inform, instruct, motivate and persuade).
      4. Utilize multiple media and technologies, and know how to judge their effectiveness a priori as well as assess their impact.
      5. Communicate effectively in diverse environments (including multi-lingual).
   B. Collaborate with Others
      1. Demonstrate ability to work effectively and respectfully with diverse teams.
      2. Exercise flexibility and willingness to be helpful in making necessary compromises to accomplish a common goal.
      3. Assume shared responsibility for collaborative work, and value the individual contributions made by each team member.

INFORMATION, MEDIA AND TECHNOLOGY SKILLS
People in the 21st century live in a technology and media-suffused environment, marked by various characteristics, including: 1) access to an abundance of information, 2) rapid changes in technology tools, and 3) the ability to collaborate and make individual contributions on an unprecedented scale. To be effective in the 21st century, citizens and workers must be able to exhibit a range of functional and critical thinking skills related to information, media and technology.

4. Information Literacy
   A. Access and Evaluate Information
      1. Access information efficiently (time) and effectively (sources).
      2. Evaluate information critically and competently.
   B. Use and Manage Information
      1. Use information accurately and creatively for the issue or problem at hand
      2. Manage the flow of information from a wide variety of sources.
      3. Apply a fundamental understanding of the ethical/legal issues surrounding the access and use of information.

5. Media Literacy
   A. Analyze Media
      1. Understand both how and why media messages are constructed, and for what purposes.
      2. Examine how individuals interpret messages differently, how values and points of view are included or excluded, and how media can influence beliefs and behaviors.
      3. Apply a fundamental understanding of the ethical/legal issues surrounding the access and use of media.
   B. Create Media Products
      1. Understand and utilize the most appropriate media creation tools, characteristics and conventions.
      2. Understand and effectively utilize the most appropriate expressions and interpretations in diverse, multi-cultural environments.

4. Information, Communications and Technology (ICT) Literacy
   A. Apply Technology Effectively
1. Use technology as a tool to research, organize, evaluate and communicate information.
2. Use digital technologies (computers, PDAs, media players, GPS, etc.), communication/networking tools and social networks appropriately to access, manage, integrate, evaluate and create information to successfully function in a knowledge economy.
3. Apply a fundamental understanding of the ethical/legal issues surrounding the access and use of information technologies.

LIFE AND CAREER SKILLS
Today’s life and work environments require far more than thinking skills and content knowledge. The ability to navigate the complex life and work environments in the globally competitive information age requires students to pay rigorous attention to developing adequate life and career skills.

5. Flexibility and Adaptability
A. Adapt to Change
   1. Adapt to varied roles, jobs responsibilities, schedules and contexts.
   2. Work effectively in a climate of ambiguity and changing priorities.
B. Be Flexible
   1. Incorporate feedback effectively.
   2. Deal positively with praise, setbacks and criticism.
   3. Understand, negotiate and balance diverse views and beliefs to reach workable solutions, particularly in multi-cultural environments.

6. Initiative and Self-Direction
A. Manage Goals and Time
   1. Set goals with tangible and intangible success criteria.
   2. Balance tactical (short-term) and strategic (long-term) goals.
   3. Utilize time and manage workload efficiently.
B. Work Independently
   1. Monitor, define, prioritize and complete tasks without direct oversight.
C. Be Self-directed Learners
   1. Go beyond basic mastery of skills and/or curriculum to explore and expand one’s own learning and opportunities to gain expertise.
   2. Demonstrate initiative to advance skill levels towards a professional level.
   3. Demonstrate commitment to learning as a lifelong process.
   4. Reflect critically on past experiences in order to inform future progress.

7. Social And Cross-Cultural Skills
A. Interact Effectively with Others
   1. Know when it is appropriate to listen and when to speak.
   2. Conduct themselves in a respectable, professional manner.
B. Work Effectively in Diverse Teams
   1. Respect cultural differences and work effectively with people from a range of social and cultural backgrounds.
   2. Respond open-mindedly to different ideas and values.
   3. Leverage social and cultural differences to create new ideas and increase both innovation and quality of work.
8. **Productivity and Accountability**
   A. **Manage Projects**
      1. Set and meet goals, even in the face of obstacles and competing pressures.
      2. Prioritize, plan and manage work to achieve the intended result.
   B. **Produce Results**
      1. Demonstrate additional attributes associated with producing high quality products including the abilities to:
         a. Work positively and ethically.
         b. Manage time and projects effectively.
         c. Multi-task.
         d. Participate actively, as well as be reliable and punctual.
         e. Present oneself professionally and with proper etiquette.
         f. Collaborate and cooperate effectively with teams.
         g. Respect and appreciate team diversity.
         h. Be accountable for results.

9. **Leadership and Responsibility**
   A. **Guide and Lead Others**
      1. Use interpersonal and problem-solving skills to influence and guide others toward a goal.
      2. Leverage strengths of others to accomplish a common goal.
      3. Inspire others to reach their very best via example and selflessness.
      4. Demonstrate integrity and ethical behavior in using influence and power.
   B. **Be Responsible to Others**
      1. Act responsibly with the interests of the larger community in mind.
Activities

LEARNING AND INNOVATION SKILLS – Creativity and Innovation

Think Creatively (1.A)

Decision Making: Complexity in Simple Questions
Essential Question: How can a seemingly simple decision have unintended consequences?

1. Put students in groups. Give your students a problem/opportunity that they will need to analyze in that may be solved in multiple ways, and that has different ways of viewing the issue/problem. Something like “Should the driving age be raised”

2. Allow the students to develop their solutions using their best thinking. Have them present their results to the class. Discuss.

3. Ask the groups to re-think their solutions by looking at the new schedule through the eyes of a non-student. Assign them roles as teachers, administrators, coaches, custodians, bus drivers, parents, employers.... This is the creative thinking part...allowing the students to look at situations through different lenses. Have the students report how the new solutions differed from the original, and why.

4. When the groups are done with their solutions:
   a. Instruct them to write one consequence of their solution on a sheet of paper. These can be positive or negative.
   b. Each group should pass their paper on to the group on their right.
   c. Each group then “forecasts” an additional consequence of the previous consequence
   d. Repeat until all groups have “forecasted” the additional consequences.
   e. Allow groups to discuss and revise based on this new information.

“The problems that exist in the world today cannot be solved by the level of thinking that created them.”
Albert Einstein
**LEARNING AND INNOVATION SKILLS – Creativity and Innovation**

*Think Creatively (1.A)*

**Creativity Rubric**

Essential Question: How can I assess my creativity skills?

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<th>1</th>
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<tr>
<td><strong>Fluency</strong></td>
<td>I can think of many ideas.</td>
<td>I can think of some ideas.</td>
<td>If I get some help, I can think of ideas.</td>
<td>I have a hard time thinking of ideas.</td>
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<tr>
<td><strong>Flexibility</strong></td>
<td>I notice what is surprising, unusual, and interesting in everyday objects and situations.</td>
<td>I notice unusual things around me.</td>
<td>When someone reminds me, I notice unusual things in the world around me.</td>
<td>I hardly ever notice unusual things in the world around me.</td>
</tr>
<tr>
<td><strong>Evaluation</strong></td>
<td>I know several ways of deciding which of my ideas are worth working on.</td>
<td>I can tell which of my ideas are worth working on.</td>
<td>With help, I can tell which of my ideas are worth working on.</td>
<td>I cannot tell which of my ideas are worth working on.</td>
</tr>
<tr>
<td><strong>Risk-taking</strong></td>
<td>I like to try new projects and ideas. I do not worry about making mistakes while I am learning.</td>
<td>I try new projects and ideas. I do not worry very much about making mistakes while I am learning.</td>
<td>Sometimes, I do not try new projects and ideas because I worry that I will make mistakes.</td>
<td>I do not try new projects and ideas.</td>
</tr>
<tr>
<td><strong>Seeking Challenges</strong></td>
<td>I challenge myself to meet goals that others think are too difficult for me.</td>
<td>I challenge myself to meet goals that are difficult but within my reach.</td>
<td>I only set goals for myself that I know I can reach easily.</td>
<td>I do not set goals for myself.</td>
</tr>
<tr>
<td><strong>Elaboration</strong></td>
<td>When I know I have a good idea, I add details to make it a great idea.</td>
<td>I can usually add details to a good idea to make it better.</td>
<td>Sometimes, I cannot think of any ways to make an idea better.</td>
<td>I do not know how to make ideas better.</td>
</tr>
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LEARNING AND INNOVATION SKILLS – Creativity and Innovation

Work Creatively with Others (1.B)

Selling our Community to the World
Essential Question: How can I work with others to accomplish a creative task?

1. Divide students into groups. Explain that students will be promoting their community to tourists, businesses, or workers, culminating in creating an advertisement that highlights the community to their selected audience.
2. The groups should collaborate on choosing their audience, determining the medium they will be using for the advertisement (medium may be selected by instructor), and preparing the final content. The advertisement will be presented to the class.
   a. Resources and tools to use
      i. Brainstorming/mind mapping
      ii. Sketching/storyboarding/mockups/outline
      iii. Meeting protocols
      iv. Presentation skills and preparation
3. Students will peer review their drafts with other groups to gain other perspectives on their approach, and revise their advertisement as necessary based on peer feedback.
4. The groups will prepare a final presentation that outlines their collaboration process, intended audience and outcomes of advertisement, and share their advertisement.
5. Students will discuss or journal their experiences in working on the project and assess what successes and challenges their group faced in working together creatively.
LEARNING AND INNOVATION SKILLS – Creativity and Innovation

Work Creatively with Others (1.B)

Collaboration Checklist
Essential Question: How can I assess my collaboration skills?

<table>
<thead>
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<th>Hardly Ever</th>
<th>Sometimes</th>
<th>Always</th>
<th>Examples</th>
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<tr>
<td>I identify goals.</td>
<td>□</td>
<td>□</td>
<td>□</td>
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<td>I define tasks.</td>
<td>□</td>
<td>□</td>
<td>□</td>
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<tr>
<td>I outline approaches.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td></td>
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<tr>
<td>I suggest new ideas and directions.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td></td>
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<tr>
<td>I volunteer to tackle difficult tasks.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td></td>
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<tr>
<td>I ask questions.</td>
<td>□</td>
<td>□</td>
<td>□</td>
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<tr>
<td>I find and share resources.</td>
<td>□</td>
<td>□</td>
<td>□</td>
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<td>I request clarification.</td>
<td>□</td>
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<tr>
<td>I seek facts.</td>
<td>□</td>
<td>□</td>
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<tr>
<td>I contribute facts and opinions.</td>
<td>□</td>
<td>□</td>
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<td>I respond enthusiastically to others.</td>
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<td>□</td>
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<td>I invite everyone's participation.</td>
<td>□</td>
<td>□</td>
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<tr>
<td>I make people feel good about what they contribute to the group.</td>
<td>□</td>
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<td>I summarize points of discussion.</td>
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<td>I help create a timeline and set priorities.</td>
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<td>□</td>
<td>□</td>
<td></td>
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<tr>
<td>I keep the discussion on track.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td></td>
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<tr>
<td>I stimulate discussion by presenting different points of view.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>I help direct division of tasks.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>I respectfully challenge weak ideas.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>I help identify necessary changes and encourage group action for change.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>I seek alternative solutions.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>I help my group reach fair, well-reasoned decisions.</td>
<td>□</td>
<td>□</td>
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</tbody>
</table>
LEARNING AND INNOVATION SKILLS – Creativity and Innovation

Implement Innovations (1.C)

Thinking Skills Unit
This is a comprehensive unit of instruction that will take some time. Elements of this activity and processes may be used independently to teach inventive and innovation skills.

When a student is asked to “invent” a solution to a problem, the student must draw upon previous knowledge, skills, and experience. The student also recognizes areas where new learning must be acquired in order to understand or address the problem. This information must then be applied, analyzed, synthesized, and evaluated. Through critical and creative thinking and problem-solving, ideas become reality as students create inventive solutions, illustrate their ideas, and make models of their inventions. Inventive thinking lesson plans provides students with opportunities to develop and practice higher-order thinking skills.

Throughout the years, many thinking skills models and programs have been generated from educators, seeking to describe the essential elements of thinking and/or to develop a systematic approach to teaching thinking skills as part of the schools curricula. Three models are illustrated below in this introduction. Although each uses different technology, each model describes similar elements of either critical or creative thinking, or both.

The models demonstrate how inventive thinking lesson plans could provide an opportunity for students to “experience” most of the elements described in the models. After teachers have reviewed the thinking skills models listed above, they will see the critical and creative thinking and problem-solving skills and talents that can be applied through the activity of inventing. The inventive thinking lesson plans that follow can be used across all disciplines and grade levels and with all students. It can be integrated with all curricular areas and used as a means of applying the concepts or elements of any thinking skills program that may be in use.

Teacher preparation – Models of Thinking Skills (search these and review them)
- Benjamin Bloom (Bloom’s Taxonomy, Revised)
- Calvin Taylor
- Isaksen and Treffinger

Students of all ages are talented and creative. This project will give them an opportunity to develop their creative potential and synthesize and apply knowledge and skills by creating an invention to solve a problem, just as a “real” inventor would.

Inventive Thinking Lesson Plans – List of Activities
1. Introduce inventive thinking
2. Practicing Creativity with the class
3. Practicing Inventive Thinking with the class
4. Developing an Invention Idea
7. Completing the Invention
8. Naming the Invention
9. Optional Marketing Activities
10. Parent Involvement
5. Brainstorming for Creative Solutions

6. Practicing the Critical Parts of Inventive Thinking

Activity 1: Introducing Inventive Thinking and Brainstorming
Read about the lives of great inventors (prepare short one-two page histories of inventors including such people as Leonardo Da Vinci, Benjamin Franklin, Eli Whitney, Eastman Kodak, George Washington Carver, John Deere, Henry Ford, and some more contemporary inventors). Read the stories about great inventors in class or let students read themselves. Ask students “how did these inventors get their ideas? How did they make their ideas a reality?” Locate books in your library about inventors, Invention and Creativity.

Talk to a real inventor
Invite a local inventor to speak in class.

Examine Inventions
Next, ask the students to look at things in the classroom that are inventions. All the inventions in the classroom that have a US patent will have a patent number. One such item is probably the pencil sharpener. Tell them to check out their house for patented items. Let the students brainstorm a list of all the inventions they discover. What would improve these inventions?

Discussion
In order to guide your students through the inventive process, a few preliminary lessons dealing with creative thinking will help set the mood. Begin with a brief explanation of brainstorming and discussion on the rules of brainstorming.

What is Brainstorming?
Brainstorming is the process of spontaneous thinking used by an individual or by a group of people to generate numerous alternative ideas while deferring judgment. Introduced by Alex Osborn in his book “applied Imagination”, brainstorming is a crux of each of the stages of all problem-solving methods.

Rules for Brainstorming
1. No Criticism Allowed
   People tend to automatically evaluate each suggested idea—their own as well as others. Both internal and external criticism is to be avoided while brainstorming. Neither positive nor negative comments are allowed. Either type inhibits the free flow of thought and requires time which interferes with the next rule. Write each spoken idea down as it is given and move on.
2. Work for Quantity
   Alex Osborn stated that “Quantity breads quality”. People must experience a “brain drain” (get all the common responses out of the way) before the innovative, creative ideas can surface; therefore, the more ideas, the more likely they are to be quality ideas.
3. Hitchhiking Welcome
   Hitchhiking occurs when one member’s idea produces a similar idea or an enhanced idea in another member. All ideas should be recorded.
4. Freewheeling Encouraged
   Outrageous, humorous and seemingly unimportant ideas should be recorded. It is not uncommon for the most off-the-wall ideas to develop into innovative approaches.
Activity 2: Practicing Creativity with the class

Step 1: Cultivate the following creative thinking processes described by Paul Torrance and discussed in “The Search for Satori and Creativity” (1979):

- Fluency: the production of a great number of ideas.
- Flexibility: the production of ideas or products that show a variety of possibilities or realms of thought.
- Originality: the production of ideas that are unique or unusual.
- Elaboration: the production of ideas that display intensive detail or enrichment.

For practice in elaboration, have pairs or small groups of students choose a particular idea from the brainstorming list of invention ideas and add the flourishes and details that would develop the idea more fully. Allow the students to share their innovative and inventive ideas.

Step 2: Once your students have become familiar with the rules of brainstorming and creative thinking processes, additional techniques for brainstorming could be introduced, such as SCAMPER.

- Substitute: What else instead? Who else instead? Other ingredients? Other material? Other power? Other place?
- Combine: What materials, features, people, processes, products, or components can I combine? Where can I build synergy?
- Adapt: What could I change? In exchange for what? What would happen if I changed the characteristics of a component?
- Put to other uses: New ways to use as is? Other uses I modified? Other places to use? Other people to reach?
- Rearrange/Reverse: What if I did it in a different way? What if the order were reversed? How would I accomplish the opposite?

Step 3: Bring in any objects around the classroom to do the following exercise. Ask the students to list many new uses for a familiar object by using the scamper technique with regard to the object. You could use a paper plate to begin with, and see how many new things the students will discover. Make sure to follow the rules for brainstorming in Activity 1.

Step 4: Put a list of objects on the chalkboard. Ask your students to combine them in different ways to create a new product.

Let the students make their own list of objects. Once they combine several of them, ask them to illustrate the new product and explain why it might be useful.

Activity 3: Practicing Inventive Thinking with the class

Before your students begin to find their own problems and create unique inventions or innovations to solve them, you can assist them by taking them through some of the steps as a group.

Finding the problem:
Let the class list problems of their own classroom that need solving. Use the “brainstorming” technique from Activity 1. Perhaps your students never have a pencil ready; as it is either missing or broken when it is time to do an assignment (a great brainstorming project would be to solve that problem). Select one problem for the class to solve using the following steps:
Find several problems.
Select one to work on.
Analyze the situation.
Think of many, varied, and unusual ways of solving the problem.

List the possibilities. Be sure to allow even the silliest possible solution, as creative thinking must have a positive, accepting environment in order to flourish.

Finding a solution
• Select one or more possible solutions to work on. You may want to divide into groups if the class elects to work on several of the ideas.
• Improve and refine the idea(s).
• Share the class or individual solution(s)/innovation(s) for solving the class problem.

Activity 4: Developing an Invention idea
Now that your students have had an introduction to the inventive process, it is the time for them to find a problem and create their own invention to solve it.

Step one: Begin by asking your students to conduct a survey. Tell them to interview everyone that they can think of to find out what problems need solutions. What kind of invention, tool, game, devise, or idea would be helpful at home, work, or during leisure time?

Step two: Ask the students to list the problems that need to be solved.

Step three: The decision-making process. Using the list of problems, ask the students to think of which problems would be possible for them to work on. They can do this by listing the pros and cons for each possibility. Predict the outcome or possible solution(s) for each problem. Make a decision by selecting one or two problems that provide the best options for an inventive solution.

Step four: Begin an inventor’s Log or Journal. A record of your ideas and work will help you develop your invention and protect it when completed. Use Activity Form- Young Inventor’s Log to help students understand what can be included on every page.

General Rules for Authentic Journal Keeping
• Use a bound notebook, make notes each day about the things you do and learn while working on your invention.
• Record your idea and how you got it.
• Write about your problems you have and how you solve them.
• Write in ink and do not erase.
• Ad sketches and drawings to make things clear.
• List all parts, sources, and costs of materials.
• Sign and date all entries at the time they are made and have them witnessed.

Step Five: To illustrate why record-keeping is important, read the following story about Daniel Drawbaugh who said he invented the telephone, but didn’t have one single paper or record to prove it. Long before Alexander Graham Bell filed a patent application in 1875, Daniel Drawbaugh claimed to have invented the telephone. But since he had no journal or record, the
Supreme Court rejected his claims by four votes to three. Alexander Graham Bell had excellent records and was awarded the patent for the telephone.

**Activity 5: Brainstorming for Creative Solutions**

Now that the students have one or two problems to work on, they must take the same steps that they did in solving the class problem in activity three. These steps could be listed on the chalkboard or a chart.

1. Analyze the problem(s). Select one to work on.
2. Think of many, varied, and unusual ways of solving the problem. List all of the possibilities. Be non-judgmental. (See Brainstorming in Activity 1 and SCAMPER in Activity 2.)
3. Select one or more possible solutions to work on.
4. Improve and refine your ideas.

Now that your students have some exciting possibilities for their invention projects, they will need to use their critical thinking skills to narrow down the possible solutions. They can do this by asking themselves the questions in the next activity about their inventive idea.

**Activity 6: Practicing the Critical Parts of Inventive Thinking**

1. Is my idea practical?
2. Can it be made easily?
3. Is it as simple as possible?
4. Is it safe?
5. Will it cost too much to make or use?
6. Is my idea really new?
7. Will it withstand use, or will it break easily?
8. Is my idea similar to something else?
9. Will people really use my invention? (Survey your classmates or the people in your neighborhood to document the need or usefulness of your idea—adapt the invention idea survey.)

**Activity 7: Completing the Invention**

When students have an idea that meets the needs of the above qualifications in Activity 6, they need to plan how they are going to complete their project. The following planning technique will save them a great deal of time and effort:

1. Identify the problem and possible solution. Give your invention a name.
2. List the materials needed to illustrate your invention and make a model of it. You will need paper, pencil and crayons or markers to draw your invention. You might use cardboard, paper, clay, wood, plastic, yarn, paper clips, and so forth to make a model. You might also want to use an art book or a book on model-making form your school library.
3. List, in order, the steps for completing your invention.
4. Think of the possible problems that might occur. How do you solve them?
5. Complete your invention.

**In Summary**

Describe the problem. List the materials needed. List the steps to complete your invention. Predict the problems that would occur.
Activity 8: Naming the Invention
An invention can be named in one of the following ways:

1. Using the inventor’s name
   - Levi Strauss = LEVI’S®
   - Louis Braille = Alphabet System
2. Using the components or ingredients of the invention
   - Root Beer
   - Peanut Butter
3. With initials or acronyms
   - IBM ®
   - S.C.U.B.A.®
4. Using word combinations (notice repeated consonant sounds and rhyming words).
   - KIT KAT ®
   - HULA HOOP ®
   - PUDDING POP ®
   - CAP’N CRUNCH ®
5. Using the product’s function
   - SUPERSEAL ®
   - DUSTBUSTER ®
   - Vacuum cleaner
   - Hairbrush
   - Earmuffs

Solving a “class” problem and creating a “class” invention will help students learn the process and make it easier for them to work on their own invention projects.

Activity Nine: Marketing Activities
Students can be very fluent when it comes to listing ingenious names of products out on the market. Solicit their suggestions and have them explain what makes each name effective. Each student should generate names for his/her own invention.

Developing a Slogan or Jingle
Have the students define the terms “slogan” and “jingle”. Discuss the purpose of having a slogan. Sample slogans and jingles:

- Things go better with Coke.
- COKE IS IT! ®
- TRIX ARE FOR KIDS ®
- OH THANK HEAVEN FOR 7-ELEVEN ®
- TWOALLBEEFPATTIES...
- GE: WE BRING GOOD THINGS TO LIFE! ®

Your students will be able to recall many slogans and jingles! When a slogan is named, discuss the reasons for its effectiveness. Allow time for thought in which the students can create jingles for their inventions.

Creating an Advertisement
For a crash course in advertising, discuss the visual effect created by a television commercial, magazine, or newspaper advertisement. Collect magazine or newspaper ads that are eye-catching—some of the ads might be dominated by words and others by pictures that “say it all.” Students might enjoy exploring newspapers and magazines for outstanding advertisements.
Have students create magazine ads to promote their inventions. (For more advanced students, further lessons on advertising techniques would be appropriate at this point.)

**Recording a Radio Promo**
A radio promo could be the icing on a student’s advertising campaign! A promo might include facts about the usefulness of the invention, a clever jingle or song, sound effects, humor... the possibilities are endless. Students may choose to tape record their promos for the use during the Invention Convention.

**Advertising Activity**
Collect 5-6 objects and give them new uses. For instance, a toy hoop could be a waist reducer, and some strange looking kitchen gadget might be a new mosquito catcher. Use your imagination! Search everywhere—from the tools in the garage to the kitchen drawer—for fun objects. Divide the class into small groups, and give each group one of the objects to work with. The group is to give the object a catchy name, write a slogan, draw an ad, and record a radio promo. Stand back and watch the creative juices flow. Variation: collect magazine ads and have the students create new advertising campaigns using a different marketing angle.

**Activity Ten: Parent Involvement**
Few, if any, projects are successful unless the student is encouraged by the parents and other caring adults. Once the students have developed their own, original ideas, they should discuss them with their parents. Together, they can work to make the student’s idea come to life by making a model. Although the making of a model is not necessary, it makes the project more interesting and adds another dimension to the project. You can involve parents by simply sending a letter home to explain the project and let them know how they may participate. One of your parents may have invented something that they can share with the class.

**Activity Eleven: Young Inventors’ Day**
Plan a Young Inventors’ Day so that your students can be recognized for their inventive thinking. This day should provide opportunities for students to display their inventions and tell the story of how they got their idea and how it works. They can share with other students, their parents, and others.
LEARNING AND INNOVATION SKILLS – Critical Thinking and Problem Solving

**Reason Effectively (2.A)**

**Analysis, Design, Development, Implement, Evaluate (ADDIE)**

Essential Question: How can I use a process to create solutions to problems?

**Time:** About 45-55 minutes.

**Process:**

Make up a reasonable problem scenario for your organization where people need to get introduced, e.g. “The manufacturing department is bringing in 20 temporaries to help with the peak season. They want us to build a short activity that will allow the permanent employees to meet and introduce themselves to the temporaries.”

Break the group into small teams. Have them discuss and create a solution:

- **Analyze** the problem- Is it a training problem? If they decide that it is not a training problem, then remind them that most problems can be solved by following an ADDIE type approach.
- **Design** the activity- Develop objectives, sequence.
- **Develop** the activity- Outline how they will perform the activity and trial it.
- **Implement**- Have each small team in turn; introduce themselves in front of the group using the activity they created.
- **Evaluate**- Give prizes to the most original, funniest, etc. by having the group vote.

This activity allows students to learn about each other’s problem solving styles. It also introduces the members to each other. This method can also be used to introduce the ADDIE method to your student leaders.

**Variation:**

*You can change the scenario to match your curriculum or a CTSO leadership activity. The important thing is to teach the process. Get Creative!**
LEARNING AND INNOVATION SKILLS – Critical Thinking and Problem Solving

**Reason Effectively (2.A)**

Critical Thinking Rubric

Essential Question: How can I assess my critical thinking skills?

<table>
<thead>
<tr>
<th></th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Identifying Important Information</strong></td>
<td>I determine what concepts and relationships are important in a complex system of abstract and concrete information.</td>
<td>I can usually tell what concepts and relationships are important in a system.</td>
<td>Sometimes, I have trouble telling the difference between important and unimportant concepts and relationships in a system.</td>
<td>I often get important and unimportant information mixed up.</td>
</tr>
<tr>
<td><strong>Making Inferences</strong></td>
<td>I use what I know about the subject along with my personal experiences and knowledge to make reasonable inferences. I use my inferences to draw conclusions about information.</td>
<td>I analyze new information and make reasonable inferences.</td>
<td>With help, I can make inferences, but sometimes my inferences are not based on good reasons.</td>
<td>I usually cannot make inferences about what I am learning.</td>
</tr>
<tr>
<td><strong>Evaluating Sources</strong></td>
<td>I use several strategies for evaluating the reliability of a variety of different kinds of sources.</td>
<td>I use some strategies for evaluating sources.</td>
<td>Sometimes, I am fooled by information that is not reliable.</td>
<td>I often cannot tell the difference between reliable and false information.</td>
</tr>
<tr>
<td><strong>Learning Independently</strong></td>
<td>I do whatever I need to do to learn more about ideas and concepts that are new to me.</td>
<td>I make an effort to learn more about ideas and concepts that are new to me.</td>
<td>If someone reminds me, I learn more about ideas and concepts that are new to me.</td>
<td>I am usually happy with what I already know about information, and I do not bother to find out more.</td>
</tr>
<tr>
<td><strong>Communicating</strong></td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>-------------------</td>
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</tr>
<tr>
<td>I can clearly and thoroughly explain my opinions by giving good reasons for them, orally and in writing.</td>
<td>I can explain my opinions by giving good reasons for them, orally and in writing.</td>
<td>With prompting and guidance, I can explain my opinions orally and in writing.</td>
<td>I cannot explain my opinions so that they make sense.</td>
<td></td>
</tr>
</tbody>
</table>
LEARNING AND INNOVATION SKILLS - Critical Thinking and Problem Solving

*Use Systems Thinking (2.B)*

**The Ice Cream Game**
Essential Question: What is systems thinking, and why is it important?

This document outlines the protocol for the Production-Distribution Game (The Ice Cream Game), developed to introduce people to concepts of system dynamics. The game can be played by as few as four and as many as 60 people (assistance is required for larger groups). The only prerequisite, besides basic math skills, is that none of the participants have played the game before, or else agree not to reveal the "trick" of the game.

1. Purpose
   a. Introduce people to the key principle "structure produces behavior"
   b. Experience the pressures of playing a role in a complex system

2. Overview of production-distribution system
   a. Identify the four positions on the board: retailer, wholesaler, distributor, and factory. Each board will have one or two players at each position. Each board comprises one team.
   b. Each position is identical (except for the factory). Each position has an inventory of ice cream. Each position receives orders from and ships Ice Cream to the sector downstream. Each position orders Ice Cream from the sector upstream. Ice Cream is received after a shipping delay. (In the case of the factory, Ice Cream is received after a production delay.) Orders are received after a mailing delay (orders placed to incoming orders).

3. Basic rules
   a. Have each team pick a name for their company (e.g. the name of a real ice cream). Distribute one Record Sheet to each position and have them label their Record Sheet with the name of their company and their position, e.g. retailer, wholesaler, etc.
   b. The object of the game is to minimize total costs for your team. The team with the lowest total costs wins. Costs are computed in the following way: The carrying costs of inventory are $.50 per case per week. Out-of-stock costs, or backlog costs, are $1.00 per case per week. The costs of each stage (retailer, wholesaler, distributor, factory) for each week, added up for the total length of the game, determine the total cost.
   c. No communication between positions. Retailers should not talk to anyone else, same for wholesalers, distributors, and factories. The reason for this is that in real life there may be five factories, several dozen distributors, thousands of wholesalers, and tens of thousands of retailers and each one cannot find out what the total activity of all the others is. The only communication between sectors should be through the passing of orders and the receiving of ice cream.

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1 Sterman, John D. *The Ice Cream Distribution Game*. Sloan School of Management. Massachusetts Institute of

2 Note: The product represented by the chips does not have to be ice cream. Any product appropriate to the group may be chosen by the facilitators.
d. Retailers are the only ones who know what the customers actually order. They should not reveal this information to anyone else.

4. Steps of the Game (see attached sheet). The game leader should call out the steps as the game progresses. The first few times when the system is still in equilibrium the leader should go through the steps very slowly to make sure people have the mechanics down. Notice that of the five steps of the game, only the last, placing orders, involves a decision. The first four steps only involve moving inventory of Ice Cream or order slips, and are purely mechanical. For the first few weeks the leader should tell everyone to order four units to keep the system in equilibrium.

5. Initialization of the boards
   a. There should be twelve chips (or coins) representing twelve cases of Ice Cream in each inventory. Each chip or coin represents one case. There should be four chips in each shipping box and production delay. There should be order slips with "4" written on them, face down in each order box (orders placed, incoming orders, and production requests). A supply of blank order slips should be available at each position (see initializing the Board sheet). A supply of chips should be placed at the factory for production of new cases of ice cream.
   b. Place the customer order cards in the “order cards” box, with the order numbers face down, and the week number showing. Weeks 1 through 50 should be in order. The customer order cards with the customer demand should not be revealed in advance. The pattern of customer demand that is most effective for first-time players is a pattern of four cases per week until week five, and then eight per week from week five on. Each order deck should have fifty weeks’ worth of cards, and the players should be told that the game will be fifty weeks long. Typically it is only necessary to run the game thirty-five weeks or so in order to see the pattern of fluctuation, but telling the players it will be fifty weeks prevents horizon effects, where they run their inventories down because they feel the end of the game is coming.

6. Tips
   a. It is very helpful if the game leader makes sure that each team stays in step so that he/she can quickly glance around the room and see that everyone is at the right place.
   b. The game leader should write the current week on the blackboard or flip chart as the steps for that week are called out.
   c. In about the eighth or ninth week the retailer will run out of inventory and have a backlog for the first time. People do not understand the meaning of backlogs, or the cumulative nature of the backlog. It is necessary to stop the game at this point, asks everyone to pay attention, and explain how backlog accounting works. Explain that the backlog represents orders you have received, but have not yet filled, and which you must fill in the future. Explain that the backlog is cumulative. "Next week you have to fill the incoming orders that you receive, plus whatever is in your backlog, if possible. If not possible, then the amount left over is added to the existing backlog and must be filled in later weeks." Emphasize at this point that backlog costs twice as much as inventory. You may need to do this one or two more times, and should be careful to check and be sure that they do in fact fill their backlog. It is helpful to write the following equation on the blackboard to help with backlog accounting:

   Orders to fill = New orders + Backlog
   this week     this week     last week

   (Please see “Orders to Fill” sheet)
d. The game can be played in as little as one and a half hours if the leader maintains a very brisk pace. The debriefing usually requires at least 40 minutes and can be expanded substantially.

The quotation (below) from Tolstoy’s War and Peace illustrates well the idea “structure produces behavior.”

7. End of game
   a. Halt the game after about 36 weeks (but play the game up to that point as if it is going on to 50 weeks, to avoid unusual end-of-game moves).
   b. Ask each position on each team to calculate their total cost: Cost = Total Inventory X $0.50 + Total Backlog X $1 and to mark the total cost on the Record Sheet for the position.
   c. Pass out Orders graph sheets - one to each position. Ask each position to graph their orders, week by week. Clarify to Factory that they will graph their Production Requests.
   d. Pass out Effective Inventory graph sheets - one to each position. Ask each position to graph the inventory week by week, showing any backlog as negative inventory.
   e. Team name and position must be indicated on all sheets. Once the graph is complete, have the players connect the dots with a bold magic marker (color coded - black, blue, green and red - to the board) for ease of viewing by the group.
   f. Pass out the Customer Order graph sheets to everyone except Retailers. Ask each person to sketch what he or she thinks the customer order rate looked like over time. Ask each to indicate a simple scale or maximum value.

Ask Retailers not to discuss anything about customer orders until after the debrief of the game.
   g. Collect all the sheets, and send players off for a break.
   h. During break:
      1. Calculate team costs to determine the winner, and compute the average team cost.
      2. Tape sheets together (as shown below) and hang up team graphs.

<table>
<thead>
<tr>
<th>Effective Inventory</th>
<th>Orders/Production Requests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retailer</td>
<td>Retailer</td>
</tr>
<tr>
<td>Wholesaler</td>
<td>Wholesaler</td>
</tr>
<tr>
<td>Distributer</td>
<td>Distributer</td>
</tr>
<tr>
<td>Factory</td>
<td>Factory</td>
</tr>
</tbody>
</table>
Tolstoy on the "Laws of History", War and Peace

Part 11, I:
"The first fifteen years of the nineteenth century present the spectacle of an extraordinary movement of millions of men. Men leave their habitual pursuits; rush from one side of Europe to the other; plunder, slaughter one another, triumph and despair; and the whole current of life is transformed and presents a quickened activity, first moving at a growing speed, and then slowly slackening again. What was the cause of that activity, or from what laws did it arise? Asked the human intellect.

The historians, in reply to that inquiry, lay before us the sayings and doings or some dozens of men in one of the buildings of the city of Paris, summing up those doings and sayings by one word--revolution. Then they give us a detailed biography of Napoleon, and of certain persons favorably or hostilely disposed to him; talk of the influence of some of these persons upon others; and then say that this it is to which that activity is due, and these are its laws.

But the human intellect not only refuses to believe in that explanation, but flatly declares that the method of explanation is not a correct one, because in this explanation a smaller phenomenon is taken as the cause of a greater phenomenon. The sum of men's individual wills produced both the revolution and Napoleon; and only the sum of those wills endured them and then destroyed them.

'But whenever there have been wars, there have been great military leaders; whenever there have been revolutions in states, there have been great men,' says history. 'Whenever there have been great military leaders there have, indeed, been wars,' replies the human reason; 'but that does not prove that the generals were the cause of the wars, and that the factors leading to warfare can be found in the personal activity of one man.'

... 

For the investigation of the laws of history, we must completely change the subject of observations, must let kings and ministers and generals alone, and study the homogeneous, infinitesimal elements by which masses are led. No one can say how far it has been given to man to advance in that direction in understanding of the laws of history. But it is obvious that only in that direction lays any possibility of discovering historical laws; and that the human intellect has hitherto not devoted to that method of research one millionth part of the energy that historians have put into the description of the doings of various kings, ministers, and generals...."

Outline for Post-Game Discussion
1. Get all the graph sheets of results (Orders, Effective Inventory) taped up for display.
2. Find out which team won (lowest total cost) and distribute the winnings.
3. Although they played the game to minimize cost, that is not the real purpose of the game.

The game is designed to:
   a. Give them an experience of playing a role in a system
   b. Show them how "structure produces behavior"

4. Ask participants what their experience of playing the game was. Some good leading questions are:
a. Did you feel yourself "at the mercy" of forces in the system from time to time? Did you feel the effects of the forces in the system from time to time? (i.e., relatively helpless in the face of huge incoming orders or excess inventories)

b. Did you find yourself "blaming" the person next to you for your problems?

5. After a few minutes (about 10) of discussion, look at the graphs of the results. Ask them, "What commonalities do you see in the graphs for the different teams?" Participants should see common pattern of overshoot and oscillation. This should be most evident in the effective inventory graph.

a. Get them to really see for themselves that different people in the same structure produce qualitatively similar results. Even though they acted very differently as individuals in ordering inventory, still the overall patterns of behavior are similar. Differences in individual ordering patterns (free will) result in the quantitative differences in game results. But the qualitative patterns are the same.

b. This is a very important point--take as long as necessary to have them see it for themselves.

You might reflect at this point on what happens in the real world when such order-rate and inventory oscillations are generated. The typical organizational response is to find the "person responsible" (the guy placing the orders or the inventory manager) and blame him. The game clearly demonstrates how inappropriate this response is--different people following different decision rules for ordering all generated oscillations.

6. After having had them all see the extent to which different people produce similar results in a common structure, you then need to move on to what is usually the most powerful point made by the game: that internal structure, not external events, cause system behavior. The way to make this point is to ask the following question:

"All of you who were not retailers or who otherwise have not found out what the pattern of customer orders was, what do you think the customers were doing?"

Most people usually believe that customer demand was fluctuating because they believe that the system fluctuations must have been externally driven. Get each of them (other than retailers) to see that they assumed fluctuating customer orders.

Show the Customer Order charts that were filled out at the end of the game (Sketch a few on a single overhead transparency. Then go to one team’s graphs and carefully draw in the customer order rate on the Factory’s Order (Production Requests) graph. The small step from 4 to 8 orders should make a strong visual impression in contrast to the order rate fluctuations which often have amplitude of 20 to 40 orders per week. Moreover, the sustained oscillations generated by the system contrast sharply to the absolutely flat customer order rate after the step at week 5.

This simple exercise of getting them to see how, contrary to their expectations, the internal system structure is completely capable of generating fluctuating behavior is the most profound lesson they can learn from the game.

It is important that they see this for themselves, as a demonstration or an experimental result which they did, not as an idea of which you are trying to convince them. In fact, the game is an experiment in very true sense. The result of oscillating behavior was not predetermined.
7. The assumption that the system's problems are caused by the customer stems from the external orientation most of us adopt in dealing with most problems. In a sense, this is just an extension of the viewpoint that attributes your problems to the person(s) playing next to you in the game: "he/she did it to me" is a special case of "they (the customers) did it to me". In system dynamics we take an alternative viewpoint—that the internal structure of a system is more important than external events in generating qualitative patterns of behavior. This can be illustrated by this diagram:

```
Events
(Such as inventory stock-outs and extreme order surges)

Behavior/process (oscillation)

Structure
```

Most people try to explain reality by showing how one set of events causes another or, if they have studied a problem in more depth, by showing how a particular set of events are parts of a longer-term historical process.

Have the participants illustrate this for themselves by looking at their own "explanations" for events during the game. Take a particular incident in the game, for example a large surge in production requests at the factory, and ask the people responsible why they did that. Their answer will invariably relate their decision to some prior decision of the people they supply or who supply them. Then turn to those people and ask them why they did that. Continue this until people see that one can continue to relate one event to earlier events indefinitely.

The basic problem with the "events cause events" orientation is that it gives you very little power to alter the course of events. The focus on internal structure greatly enhances the possibilities of influencing the course of events because you are dealing with the underlying source of the process, not just trying to manipulate events.

8. If time permits, have students think of examples of problems which can be viewed as internally or externally caused. E.g. illness, famine.

9. This leaves you at the point of dealing with the problem:

"How do we deal more effectively with underlying structure?"

This is the purpose of system dynamics. So you are in an excellent position to begin introducing system dynamics tools for understanding underlying structure.
Steps of the Game

1. Receive inventory and advance the shipping delays.
   Factory advance the production delay.

2. Look at incoming orders and fill orders. (Retailer looks at customer order cards. Factory looks at incoming orders, not the production request.)

3. All incoming orders **plus** orders in backlog must be filled.
   
   If your inventory is insufficient to fill incoming orders plus backlog, fill as many orders as you can and add the remaining orders to your backlog.

4. Record your inventory or backlog.

5. Advance the order slips; and the factory produces. That is, the factory converts the production request from last week into cases of Ice Cream and put the cases (chips) in the first production delay.

6. Place and record your orders. Factory places and records its production requests.
Ice Cream Game Checklist

Project/Company: ______________________________________ Date: _____________________

Per Team (or board) Per Session
Game board (1) Masking tape
Single chips (500-600) Outline for post-game discussion
Ten chips (30) (optional, can replace some
single chips) Orders to fill sheet
Customer order cards (1) Flip charts (optional)
Order slips (200) previous game graphs (if available)

Graphs
- Effective Inventory (4)
- Orders (4)
- Customer Orders (3)

Record sheets (4)
Pencils (4)
Markers in four colors (1 each)
  - Green  - Blue
  - Red    - Black
Calculators (2)

What you receive with one complete set:
- Game board (1)  - Video (1)
- Customer order cards (1)  - Single chips (600)
- Printed instructions including record
  sheet, graphs, etc. to be duplicated
- Articles relating to the Ice Cream Game

What you need to purchase/obtain to provide for game:
- Markers in four colors  - Masking tape
- Pencils  - Flip chart (if needed)
- Calculators  - Slinky (optional)

What you need to duplicate/make for distribution:
Graphs: Copy:
1. Record Sheet (4 per team) - One per position
2. Effective Inventory graph (4 per team) - One per position
3. Orders graph (4 per team) - One per position
4. Customer Orders graph (3 per team) - One for wholesaler, distributor and factory
  only, not retailer.

Blank Order Slips
- 50 placed at each position – you may use small “Post-it” notes, or cut paper into small
  rectangles measuring approximately 1.5” x 2”
- Make seven order slips per game board with “4” on each one, and place them face down
  in each of the “orders” boxes to initialize the game board.

Orders to Fill
1. Orders to fill = Backlog + Current Orders
2. If you have enough inventory, ship all the orders to ship and record your new inventory.
3. If you do not have enough inventory, ship the entire inventory you have and record the remaining unfilled orders to fill as your new backlog.
Note: Order slips showing “4” are placed face down on the game board. Customer order cards are placed in “Customer Orders” box.
**Record Sheet**

Please check-off your position:
Team Name: ___________________ □ Retailer □ Wholesaler □ Distributor □ Factory

<table>
<thead>
<tr>
<th>Week</th>
<th>Inventory</th>
<th>Backlog</th>
<th>Your Orders Placed</th>
<th>Week</th>
<th>Inventory</th>
<th>Backlog</th>
<th>Your Orders Placed</th>
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<tbody>
<tr>
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</table>
Total:

INV 1  
BL 1

INV 2  
BL 2

(INV1 + INV2) \times 0.50 + (BL1 + BL2) \times 1.00

= Total Cost
LEARNING AND INNOVATION SKILLS – Critical Thinking and Problem Solving

Make Judgments and Decisions (2.C)

Reflected on Open-Ended Problem Solving

Essential Question: How do I address problems, and how can I improve my approach to future problems?

Process: After participating in a problem-based activity, case study, or assignment, have students fill out this worksheet to describe the process they used.

If used during a class discussion, have students fill out the worksheet during the discussion. Students may use the chart below to analyze their current decision making style.

←Weaker Decision Making →

<table>
<thead>
<tr>
<th>Confused Fact Finder (Pattern 0)</th>
<th>Biased Jumper (Pattern 1)</th>
<th>Perpetual Analyzer (Pattern 2)</th>
<th>Pragmatic Performer (Pattern 3)</th>
<th>Strategic Revisioner (Pattern 4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Decision Approach:</td>
<td></td>
<td>Overall Decision Approach:</td>
<td>Overall Decision Approach:</td>
<td>Overall Decision Approach:</td>
</tr>
<tr>
<td>Attempts to find the single &quot;correct&quot; answer to open-ended problems.</td>
<td>Begins with decision, and then stacks up evidence / arguments to support it.</td>
<td>Performs comprehensive and objective analyses, but unable to reach or strongly defend a decision.</td>
<td>Makes well-founded decision based on objective analysis of viable alternatives.</td>
<td>Same as Pattern 3, but spontaneously seeks continuous improvement; reconsiders approaches / decisions / priorities over time.</td>
</tr>
</tbody>
</table>

Common Weaknesses:
- Fails to realistically perceive uncertainties / ambiguities
- Recasts open-ended problem to one having a single "correct" solution
- Categorizes solutions dichotomously as right / wrong, good / bad, smart / stupid, etc.
- Insists that experts (including their boss or CPA) provide the "correct" solution
- Expresses

Major Improvements Over Pattern 0:
- Recognizes obvious uncertainties surrounding a decision
- Acknowledges multiple solutions / viewpoints
- Begins to use evidence logically to support a decision

Common Weaknesses:
- Jumps to conclusions; decides based on own preferences, "gut"

Major Improvements Over Pattern 1:
- Presents coherent and balanced description of a problem and its larger context
- Identifies issues, assumptions, and biases associated with multiple solutions / viewpoints
- Attempts to control own biases
- Logically and qualitatively evaluates evidence

Common Weaknesses:
- Appropriately explores the problem, information, and alternatives
- Clarifies key issues, assumptions, and priorities for making decisions
- Articulates well-founded support for choosing one solution while objectively considering other viable options
- Often concludes based on situational pragmatics or past

Major Improvements Over Pattern 3:
- Establishes effective monitoring activities to address key limitations
- Exhibits a strategic, long-term vision
- Anticipates and takes advantage of change
- Systematically interprets and re-interprets information as greater knowledge/expertise is gained
- Identifies new ways to generate relevant and useful information
- Reconsiders decisions and approaches, as appropriate, when new information becomes available
feeling, or simplistic analysis
- Stacks up evidence to support own view
- Ignores contrary information
- Views personal opinion as equal to other forms of evidence; discounts experts' analyses
- Fails to recognize or evaluate assumptions
- Superficially understands other solutions/viewpoints
- Does not evaluate the quality of evidence/arguments
- Insists that all opinions are equally valid.
- Unable to establish priorities for judging across alternatives
- Jeopardizes progress by getting stuck on issues such as definitions or by endlessly calling for more evidence or additional analyses
- Reluctant to select and defend a single overall solution as most viable, or provides an inadequately supported solution
- Writes overly long memos in an attempt to demonstrate all aspects of analysis (unable to prioritize)
- Establishes more effective processes for making complex decisions

Common Weaknesses:
- Does not give sufficient attention to long-term, strategic issues
- Fails to adequately identify, monitor, and address solution limitations

Common Weaknesses:
- Not applicable
Decision Making Process  

Recognition of Alternative Solutions and Uncertainties

Briefly describe the possible solutions you considered:

What uncertainties are there about his problem? Why might there be disagreement about the best solution?

Use of Relevant Information in Addressing the Problem

List relevant information that you used in addressing the problem:

Interpretations of Information

Did you think about how different people could see information related to this problem in different ways? Give an example:

Use of Guidelines of Principles to Judge Across the Various Options

Can you explain how you decided what factors were most important in solving this problem? Give an example.

In coming to your solution, did you carefully consider more than one opinion or solution? Explain.

---

Communication

How did you take into account the audience and setting for communicating your solution?

Learning From Past Experience

What did you learn from your experience with this problem?

If you encounter a similar problem in the future, would you address it the same way? Why or why not?
LEARNING AND INNOVATION SKILLS – Critical Thinking and Problem Solving

Make Judgments and Decisions (2.C)

Decision Making Rubric
Essential Question: How can I assess my decision-making skills?

<table>
<thead>
<tr>
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<th>4</th>
<th>3</th>
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</thead>
<tbody>
<tr>
<td>Finding Relevant Information</td>
<td><strong>I know several strategies to help me find the information I need to make a good decision.</strong></td>
<td><strong>I know how to find the information I need to make a good decision.</strong></td>
<td><strong>With help, I can usually find the information I need to make a good decision.</strong></td>
<td><strong>I cannot find the information I need to make a decision.</strong></td>
</tr>
<tr>
<td>Creating Options</td>
<td><strong>I think of several possible choices when an important decision must be made.</strong></td>
<td><strong>I think of more than one option when I have to make an important decision.</strong></td>
<td><strong>When I have help, I can think of more than one option when I have to make an important decision.</strong></td>
<td><strong>I usually can only think of one possible choice when I have to make an important decision.</strong></td>
</tr>
<tr>
<td>Weighing Options</td>
<td><strong>I use a variety of reasoning strategies to weigh my options and choose the best one.</strong></td>
<td><strong>I think carefully about all my choices before I make a decision.</strong></td>
<td><strong>Unless someone reminds me, I often make decisions without thinking carefully about them.</strong></td>
<td><strong>I usually make important decisions quickly without thinking carefully about them.</strong></td>
</tr>
<tr>
<td>Predicting Consequences</td>
<td><strong>I predict the consequences of each of my decisions and think about the impact that they will have on others and me.</strong></td>
<td><strong>I think about the consequences of my decisions.</strong></td>
<td><strong>I have trouble thinking about what the consequences of my decisions will be.</strong></td>
<td><strong>I do not think about the consequences of my decisions.</strong></td>
</tr>
<tr>
<td>Communicating</td>
<td><strong>I can explain the reasons for my decisions carefully and in detail.</strong></td>
<td><strong>I can thoroughly explain my decisions.</strong></td>
<td><strong>I have difficulty explaining the reasons for my decisions.</strong></td>
<td><strong>My explanations for my decisions are usually confusing and unclear.</strong></td>
</tr>
</tbody>
</table>
LEARNING AND INNOVATION SKILLS – Critical Thinking and Problem Solving

Solve Problems (2.D)

Free Standing Structure
Essential Question: How can I solve a problem within given constraints?

Students work in groups to build a freestanding structure.

Time: 50 minutes

Objective: To build the tallest structure using the least amount of cost. Students may only use the materials provided for purchase. Once you purchase the materials, they are calculated into your total cost, whether you use them or not.

Materials Needed:
- A box of straws
- A box of paper clips
- A box of tooth picks
- Masking tape

Cost of materials:
Straws $1.00 Ea.
Paper Clips $ .20 Ea.
Tooth Picks $ .10 Ea.
Masking Tape $ .20 Roll

Student will make calculations based on how many of each of the following were purchased (all materials must be included even if not used in the actual building)

_______ Straws X $1.00 =

_______ Paper Clips X $ .20 =

_______ Tooth Picks X $ .10 =

_______ Masking Tape X $ .20 =

Total Cost: __________
Formula = \*C/\*H=
Total Cost of Structure: __________
\*Height of Structure in inches: __________
\* Cost per inch of height: __________

After structure is built, a spokesperson from each group will present their structure to the class. The instructor will measure the structure vertically, rounding up to the nearest \(\frac{1}{4}\) inch.
LEARNING AND INNOVATION SKILLS – Critical Thinking and Problem Solving

**Solve Problems (2.D)**

**Problem Solving Rubric**

Essential Question: How can I assess my problem solving skills?

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<th>4</th>
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<th>1</th>
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</thead>
<tbody>
<tr>
<td><strong>Identifying Problems</strong></td>
<td>I anticipate different kinds of problems in complicated projects and think of ways to solve them before they happen.</td>
<td>I anticipate problems in complicated projects and think of ways to avoid them.</td>
<td>Sometimes I anticipate problems in complicated projects, but I usually do not think of ways to avoid them.</td>
<td>I have a hard time anticipating problems before they happen.</td>
</tr>
<tr>
<td><strong>Identifying Relevant Information</strong></td>
<td>I clearly identify important information needed to solve complex problems.</td>
<td>I separate important information from unimportant information when solving problems.</td>
<td>I sometimes need help identifying important information when solving problems.</td>
<td>I often miss important information when solving problems.</td>
</tr>
<tr>
<td><strong>Analyzing Problems</strong></td>
<td>I carefully analyze all the characteristics of a problem before I begin to solve it.</td>
<td>I think carefully about a problem before I try to solve it.</td>
<td>Sometimes, I start to solve a problem before I think about it.</td>
<td>I usually start to solve a problem before I think about it.</td>
</tr>
<tr>
<td><strong>Using Strategies</strong></td>
<td>I use the strategies and tools I learned and subject-area knowledge to solve problems, even when they are not school assignments.</td>
<td>I use subject-area strategies, tools, and knowledge to solve problems.</td>
<td>If I am reminded, I use subject-area strategies, tools, or knowledge to solve problems.</td>
<td>I do not use subject-area strategies, tools, or knowledge to solve problems.</td>
</tr>
<tr>
<td><strong>Reflecting</strong></td>
<td>I reflect on my problem solving processes, evaluate how well they are working, and make changes when necessary.</td>
<td>I reflect on my problem solving processes by thinking about what I did well and what I can do better.</td>
<td>I sometimes go back and think about how I solved a problem after I am finished.</td>
<td>I hardly ever go back and think about how I solved a problem after I am finished.</td>
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</table>
LEARNING AND INNOVATION SKILLS – Communication and Collaboration

Communicate Clearly (3.A)

The JOHARI Window
Essential Question: How does communication occur at two levels?

Time: 20-40 minutes.

Instructions
1. Read and discuss The Johari Window that is listed below.
2. Divide the class into small groups and have them discuss the questions.

Have each group list their findings on a flip chart.
When they are finished, rejoin them into one large group and have each group discuss their findings.

The Johari Window
About thirty years ago, Joseph Luft and Harrington Ingram created a set of squares to reveal what we know or don’t know about something and what other know or don’t know about something. They call it the “Johari Window of Opportunity” (from JOseph and HARrington).

They theorized that the communications process occurs at two levels:
- The overt level- what was actually said?
- The covert or hidden level- what is actually meant?

When the two levels of the communication process are viewed from the perspectives of the communicator and the listeners, it provides four panes into the window into how we give and receive information about ourselves and others:

- **Arena** – Known to self and others: This is what we communicate to others. It is what the communication process is all about.
- **Hidden** – Known to self, but unknown to others: This is what we conceal from others. Sometimes there is a good reason for holding something back, e.g. gossiping. At other times it might be bad for the communication process; e.g. holding something back because it gives us a false sense of job security.
- **Blindspot** – Unknown to self, but known to others: Sometimes we communicate something we are unaware of. For example, I might say, “I’m not angry,” while slamming my fist on the table.
- **Unknown** – Unknown to neither self nor others.
<table>
<thead>
<tr>
<th>Known to Self</th>
<th>Not Known to Self</th>
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<tbody>
<tr>
<td>Open</td>
<td>Blind</td>
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</table>

<table>
<thead>
<tr>
<th>Known to Others</th>
<th>Open</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Known to Others</td>
<td>Hidden</td>
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</table>

1. What pane can lead to confusion? Why
2. What pane is not really troublesome, however it can lead to the most opportunities for improvement? Why?
3. What are some other reasons that people might hold back (Hidden)?
4. What does your JOHARI window look like at home? At school? With friends?

**Instructor Discussion Guide**

1. Hidden can convey double meanings to others. i.e. you tell your friends to decide what movie to watch while you are gone, but you change the movie when you get back
2. The Unknown, as these can be thought of as windows of opportunity- better communication processes, brainstorming sessions, learning from others. The unknown can turn into the known
3. Lack of trust, we may have feelings we do not feel comfortable discussing with others until we know them well, or we do not want to hurt someone.
4. Why do you portray a different persona around different groups?
LEARNING AND INNOVATION SKILLS – Communication and Collaboration

Communicate Clearly (3.A)

Communication Rubric
Essential Question: How can I assess my communication skills?

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<tr>
<th>Speaking Content: Introduction</th>
<th>4</th>
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</thead>
<tbody>
<tr>
<td>When I present, I begin with an introduction that informs my audience of my presentation’s theme and engages my audience.</td>
<td>When I present, I begin by introducing the topic.</td>
<td>When I present, I try to introduce the topic, but my introduction may leave my audience confused about my presentation’s topic.</td>
<td>I do not begin my presentation by introducing my topic.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Speaking Content: Body</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>I provide details and supporting information that clarify the main ideas and elaborate on thoughts, ideas, and opinions.</td>
<td>I provide details and supporting information that clarify the main ideas.</td>
<td>I provide some details and supporting information that clarify some of the main ideas.</td>
<td>I do not provide any details or supporting information to clarify the main ideas.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Speaking Content: Conclusion</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>I conclude my presentation in a memorable way to reinforce my presentation’s theme.</td>
<td>I conclude my presentation by reinforcing my presentation’s theme.</td>
<td>I conclude my presentation in a generic way</td>
<td>I do not end my presentation with a conclusion.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Speaking: Voice and Mannerisms</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>When I present, I speak naturally with poise, precision, animation, and proper volume. I effectively use nonverbal cues, such as facial expressions, gestures, posture, and proximity.</td>
<td>When I present, I enunciate clearly and speak audibly, avoid clumsy pauses and fillers, maintain eye contact with my listeners, and use gestures and facial expressions to keep the audience engaged.</td>
<td>When I present, I sometimes use a voice too soft for listeners to comfortably hear and understand, use fillers such as “uh” and “um”, have difficulty maintaining eye contact, and forget to use nonverbal cues.</td>
<td>When I present, I speak inaudibly, enunciate poorly, mispronounce words, distract listeners with fillers such as “uh” or “um”, pause awkwardly, frequently look down to avoid eye contact, and use distracting gestures and other nonverbal cues.</td>
<td></td>
</tr>
<tr>
<td>Speaking: Audience Awareness</td>
<td>I recognize and effectively vary my speaking based on audience characteristics, such as group size, gender, and age.</td>
<td>I recognize different types of audiences and vary my speaking to meet their needs.</td>
<td>I try to take into account different types of audiences, but I am not effective in varying my speaking to meet their needs.</td>
<td>I do not consider different types of audiences.</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>Speaking: Purpose</td>
<td>I vary my word choice, tone, animation, gestures, pauses, and opinions according to the purpose of my speaking, such as to inform, persuade, or entertain.</td>
<td>I vary my speaking according to the purpose, such as to inform, persuade, or entertain.</td>
<td>I try to vary my speaking according to the purpose, but I have difficulty sounding credible.</td>
<td>I do not consider the purpose for my speaking.</td>
</tr>
<tr>
<td>Speaking: Audio or Visual Aids</td>
<td>I effectively use a variety of audio and visual aids to enhance my message.</td>
<td>I use audio or visual aids to enhance my message.</td>
<td>I try to use audio and visual aids, but they may not enhance my message.</td>
<td>I do not use audio or visual aids, or if I use them, they distract the audience from my message.</td>
</tr>
<tr>
<td>Listening: Body Language</td>
<td>I listen attentively by facing the speaker, making eye contact, and paraphrasing what is said.</td>
<td>I usually listen attentively, face the speaker, make eye contact, and paraphrase what is said.</td>
<td>I try to listen to the speaker but my attention sometimes wanders, I frequently break eye contact, or I have difficulty recalling what is said.</td>
<td>I do not listen attentively, I create disruptions, and I cannot recall what is said.</td>
</tr>
<tr>
<td>Listening: Questions</td>
<td>I ask and respond to questions effectively and appropriately about presentations.</td>
<td>I ask and respond to questions appropriately.</td>
<td>I rarely ask questions and make limited responses to questions asked of me.</td>
<td>I do not ask or answer questions.</td>
</tr>
<tr>
<td>Listening: Interpretation</td>
<td>I identify and interpret multiple messages and purposes intended by the speaker. I can:</td>
<td>I identify and interpret some messages and purposes intended by the speaker. I can:</td>
<td>I try to identify and interpret messages and purposes intended by the speaker, but I have trouble understanding some pieces. I can:</td>
<td>I cannot identify or interpret messages and purposes intended by the speaker.</td>
</tr>
<tr>
<td></td>
<td>• Summarize the main ideas thoroughly and precisely</td>
<td>• Summarize main ideas clearly and accurately</td>
<td>• Summarize some of the main ideas</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Distinguish between fact and opinion</td>
<td>• Distinguish between fact and opinion</td>
<td>• Sometimes distinguish between facts and opinions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Identify supported and unsupported statements</td>
<td>• Draw appropriate conclusions</td>
<td>• Draw basic conclusions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Recognize persuasive appeals</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
- Draw sound, thoughtful conclusions with supporting details
- Follow the speaker’s reasoning

I identify and interpret multiple messages and purposes intended by the speaker. I can:
- Summarize the main ideas thoroughly and precisely
- Distinguish between fact and opinion
- Identify supported and unsupported statements
- Recognize persuasive appeals
- Draw sound, thoughtful conclusions with supporting details
- Follow the speaker’s reasoning
### Listening: Following Instructions

<table>
<thead>
<tr>
<th>I accurately follow instructions that require action over an extended period of time. I ask questions to clarify instructions and directions.</th>
<th>I restate and carry out multistep oral instructions. I ask questions to clarify instructions.</th>
<th>I have trouble carrying out multistep oral instructions.</th>
<th>I need to hear oral instructions repeatedly before I can carry them out.</th>
</tr>
</thead>
</table>

### Discussing: Body Language

<table>
<thead>
<tr>
<th>I pay attention when others are speaking by maintaining eye contact; listening with openness, interest, and awareness; and giving appropriate verbal and nonverbal cues.</th>
<th>I pay attention when others are speaking by maintaining eye contact and giving some appropriate verbal and nonverbal cues.</th>
<th>I usually pay attention when others are speaking, but sometimes, I interrupt or give inappropriate nonverbal cues, such as rolling my eyes, yawning, or looking away.</th>
<th>I seldom pay attention when others are speaking, or I create disruptions.</th>
</tr>
</thead>
</table>

### Discussing: Participation

<table>
<thead>
<tr>
<th>I contribute by responding directly and thoughtfully to others’ ideas and opinions; actively and consistently sharing my thoughts, opinions, and ideas; and sometimes leading the group by asking higher-level questions or by drawing others out.</th>
<th>I contribute by connecting to what others say and by sharing my thoughts, opinions, and ideas.</th>
<th>I occasionally contribute by connecting to what others say, but often I am hesitant to share my thoughts, opinions, and ideas.</th>
<th>I seldom make an effort to connect to what others say, and I rarely share my thoughts, opinions, or ideas, or I only share when prompted to do so.</th>
</tr>
</thead>
</table>

### Discussing: Critical Thinking

<table>
<thead>
<tr>
<th>I look for points of agreement in all points of view, even those I disagree with, and I question all opinions critically, even those I agree with.</th>
<th>I seriously consider all points of view in a discussion.</th>
<th>I consider some points of view in a discussion, but I may accept opinions I agree with or reject opinions I do not agree with without much thought.</th>
<th>I rarely think seriously about viewpoints that I do not agree with in a discussion.</th>
</tr>
</thead>
</table>
LEARNING AND INNOVATION SKILLS – Communication and Collaboration

Collaborate with Others (3.B)

Harnessing Group Dynamics for Greater Productivity
Essential Question: How do group dynamics impact group productivity?

Read and discuss the following article:
Any experienced supervisor knows that groups either work for you or against you—sometimes at the same time! The processes of group dynamics—how people behave in groups and how the group itself behaves—are closely tied to group productivity, a critical issue today.

Successful supervisors don’t take groups for granted, but instead proactively seek out ways to harness their productive potential. Half the battle is understanding the processes of group dynamics well enough to develop intelligent strategies for managing groups.

Ten Principles, Ten Strategies
Let’s explore ten principles of group dynamics and ten complementary strategies for harnessing group productivity.

Principle #1
Groups don’t like uncertainty, so they lean heavily toward consensus-building. A group mindset, or personality, naturally emerges built around the shared perceptions, experiences, and biases of members. Over time, this mindset acts as a "gyroscope" that produces groupthink.

Strategy
Since supervisors can’t expect most employees to exercise a great deal of independent thinking and individuality during group deliberations, a conscious effort must be made to solicit feedback from individual group members, perhaps away from the group as a whole.

Principle #2
Groups tend to have a false sense of vision and objectivity as they deliberate. Members act as though the group has clearly identified goals and well-defined plans and procedures when in actuality these are usually fuzzy and sloppily thought through.

Strategy
Supervisors must nail down goals and plans before group activities get underway. These must be specific, measurable, and frequently communicated. The supervisor must move decisively during group meetings to challenge fuzzy thinking, incomplete background analysis, and biased motives.

Principle #3
Group members tend to take information—both oral and written—at face value. This facilitates consensus-building and creates the appearance of rationality (careful and objective thinking), even though the information may be incomplete, inaccurate, or purely subjective.

(Pre-Meeting Research)
Strategy
Supervisors must do their homework before and after group meetings to insure that information is reliable. This entails asking a lot of questions, challenging assumptions, and carrying out behind-the-scenes research.
Principle #4
Ironically most groups make sparse use of participative management in making decisions and doing work. The headlong rush to reach consensus is generally so strong that little attention is devoted to smoking out individual opinions and encouraging dissenting viewpoints. Group members fear they will "hold up the proceedings," "impede progress," or "rock the boat." Unless they hold strong, passionate viewpoints about a particular issue, they tend to simply swallow any doubts or misgivings they might have.

(Probing for Feedback)
Strategy:
The discerning group leader will create ways for members to sound off during meetings, such as calling on them by name, probing beneath the surface for comments, praising forthright exchanges, and not rushing into voting. Supervisors should also make a point to get an informal earful from group members away from formal deliberations.

Principle #5
Groups often operate with a poor sense of timing, either reaching decisions and taking action prematurely or procrastinating. Sometimes no action is taken at all, as group members equate the meeting with productivity.

Strategy
Supervisors must pay careful attention not only to the how and why of group undertakings but also to the when. This requires a sense of timing that comes only from experience and being in close touch with the daily operating realities--in short, "management by walking around."

Principle #6
Groups over-rely on informal leaders to influence member thinking and move things along. These informal leaders emerge as the result of their personalities, technical competence, or status in the organization. Group members tend to subconsciously defer to them so that decisions can be reached with minimum controversy and maximum popularity. Decisions popular people back for generally popular decisions.

Strategy
Supervisors must strive to develop enough rapport with informal leaders to cultivate their behind-the-scenes support. The best way to generate grass-roots support for an idea is to first win over the informal leaders and then rely on them to sell team members one-on-one.

Principle #7
Groups are much more likely to focus on process (parliamentary procedure, systems and procedures, agendas, minutes, etc.) than on their mission. This is because process pursuits are easier to pursue, are more short-run in orientation, and are rooted in the comfortable traditions of the organization. Many groups seek to justify their existence and productivity by pointing to the number of times they've met, the volume of minutes recorded, and whether or not a quorum was present.

(Ends and Means)
Strategy:
Supervisors must keep the organization's purpose and missions before the group at all times and not assume that "everyone knows what we're doing and why we're doing it." Holding meetings and following bureaucratic precedent do not necessarily accomplish anything of real substance. Supervisors must help their groups see beyond the mere appearance of success by focusing on ends rather than means.

Principle #8
Most group members are gun-shy about impeding the group momentum process, so they hesitate to ask questions, postpone voting, or request additional information. This is a major underlying cause of "group juggernaut": group deliberations that run over people who get in the way.
**Strategy**
The supervisor must act as a restraining factor or governor on group deliberations by requiring that background homework be completed before group meetings; by slowing down the voting process; and by talking informally with group members away from meetings to probe for hidden feelings and agendas that might put deliberations in a different light.

**Principle #9**
Group members tend to assume that everyone else in the group is well-informed about deliberations, sympathetic to the mission, and pleased with the group's work. Such assumptions are not always justified. Unfortunately, this usually doesn't become apparent until project implementation begins and the perplexed supervisor encounters lackluster effort and marginal results.

**Strategy**
Supervisors must constantly stress individual accountability within groups by insisting that members who back a proposal pledge their enthusiastic commitment to its implementation. The supervisor must clearly signal that a vote in favor of a proposal stipulates personal commitment and action. It may also be necessary to occasionally poke and prod employees to buy into the group's mission.

**(The Bottom Line)**
**Principle #10**
There is a fundamental difference between a group and a team. Groups meet; teams produce.

Strategy: Supervisors must define themselves as producers, not bureaucrats. While bureaucrats preside, producers lead; while bureaucrats follow precedent, producers set precedent; while bureaucrats focus on means, producers focus on ends. Team-building emerges as the very foundation of productivity. A team exists when individual employees can be more productive working with the team than they can by working on their own.
LEARNING AND INNOVATION SKILLS – Communication and Collaboration

Collaborate with Others (3.B)

Ten Qualities of an Effective Team Player
Essential Question: How do I become an effective team player?

Read and discuss the following article and ask students to complete the self-assessment form and create a SMART plan to improve their collaboration skills.

Ten Qualities of an Effective Team Player
If you had the opportunity to start a new team and select anyone from your organization to be on it, who would you pick? Assuming that people have the right technical skills for the work to be done, what other factors would you use to select your team members? Teams need strong team players to perform well. But what defines such people? Read on.

1. **Demonstrates reliability**
   You can count on a reliable team member who gets work done and does his fair share to work hard and meet commitments. He or she follows through on assignments. Consistency is key. You can count on him or her to deliver good performance all the time, not just some of the time.

2. **Communicates constructively**
   Teams need people who speak up and express their thoughts and ideas clearly, directly, honestly, and with respect for others and for the work of the team. That’s what it means to communicate constructively. Such a team member does not shy away from making a point but makes it in the best way possible — in a positive, confident, and respectful manner.

3. **Listens actively**
   Good listeners are essential for teams to function effectively. Teams need team players who can absorb, understand, and consider ideas and points of view from other people without debating and arguing every point. Such a team member also can receive criticism without reacting defensively. Most important, for effective communication and problem solving, team members need the discipline to listen first and speak second so that meaningful dialogue results.

4. **Functions as an active participant**
   Good team players are active participants. They come prepared for team meetings and listen and speak up in discussions. They're fully engaged in the work of the team and do not sit passively on the sidelines. Team members who function as active participants take the initiative to help make things happen, and they volunteer for assignments. Their whole approach is can-do: "What contribution can I make to help the team achieve success?"

5. **Shares openly and willingly**
   Good team players share. They're willing to share information, knowledge, and experience. They take the initiative to keep other team members informed. Much of the communication within teams takes place informally. Beyond discussion at organized meetings, team members need to feel comfortable talking with one another and passing

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4 Adapted From: *Managing Teams for Dummies.*
along important news and information day-to-day. Good team players are active in this informal sharing. They keep other team members in the loop with information and expertise that helps get the job done and prevents surprises.

6. **Cooperates and pitches in to help**

Cooperation is the act of working with others and acting together to accomplish a job. Effective team players work this way by second nature. Good team players, despite differences they may have with other team members concerning style and perspective, figure out ways to work together to solve problems and get work done. They respond to requests for assistance and take the initiative to offer help.

7. **Exhibits flexibility**

Teams often deal with changing conditions — and often create changes themselves. Good team players roll with the punches; they adapt to ever-changing situations. They don't complain or get stressed out because something new is being tried or some new direction is being set. In addition, a flexible team member can consider different points of views and compromise when needed. He or she doesn't hold rigidly to a point of view and argue it to death, especially when the team needs to move forward to make a decision or get something done. Strong team players are firm in their thoughts yet open to what others have to offer — flexibility at its best.

8. **Works as a problem-solver**

Teams, of course, deal with problems. Sometimes, it appears, that's the whole reason why a team is created — to address problems. Good team players are willing to deal with all kinds of problems in a solutions-oriented manner. They're problem-solvers, not problem-dwellers, problem-blamers, or problem-avoiders. They don't simply rehash a problem the way problem-dwellers do. They don't look for others to fault, as the blamers do. And they don't put off dealing with issues, the way avoiders do. Team players get problems out in the open for discussion and then collaborate with others to find solutions and form action plans.

9. **Treats others in a respectful and supportive manner**

Team players treat fellow team members with courtesy and consideration — not just some of the time but consistently. In addition, they show understanding and the appropriate support of other team members to help get the job done. They don't place conditions on when they'll provide assistance, when they'll choose to listen, and when they'll share information. Good team players also have a sense of humor and know how to have fun (and all teams can use a bit of both), but they don't have fun at someone else's expense. Quite simply, effective team players deal with other people in a professional manner.

10. **Shows commitment to the team**

Strong team players care about their work, the team, and the team's work. They show up every day with this care and commitment up front. They want to give a good effort, and they want other team members to do the same. Team players who show commitment don't come in any particular style or personality. They don't need to be rah-rah, cheerleader types. In fact, they may even be soft-spoken, but they aren't passive. They care about what the team is doing and they contribute to its success — without needing a push. Team players with commitment look beyond their own piece of the work and care about the team's overall work. In the end, their commitment is about winning — not in the sports sense of beating your opponent but about seeing the team succeed and knowing they have contributed to this success. Winning as a team is one of the great motivators of employee performance. Good team players have and show this motivation.
Ten Qualities of an Effective Team Player Assessment Form

Demonstrates reliability  
Comments: 4 3 2 1

Communicates constructively  
Comments: 4 3 2 1

Listens actively  
Comments: 4 3 2 1

Functions as an active participant  
Comments: 4 3 2 1

Shares openly and willingly  
Comments: 4 3 2 1

Cooperates and pitches in to help  
Comments: 4 3 2 1

Exhibits flexibility  
Comments: 4 3 2 1

Works as a problem-solver  
Comments: 4 3 2 1

Treats others in a respectful and supportive manner  
Comments: 4 3 2 1

Shows commitment to the team  
Comments: 4 3 2 1
LEARNING AND INNOVATION SKILLS – Communication and Collaboration

Collaborate with Others (3.B)

Building Quality Teams
Essential Question: How do I build effective teams?

Each team member is being asked to rate three of his or her teammates in order to clarify relationships within the team. A composite description can be drawn from the results. Following is a list of generally desirable traits, on which you are asked to rate the person.

Name of Person with whom you are providing feedback:

☐ Self
☐ Team Member
☐ Team

<table>
<thead>
<tr>
<th>Personal Contribution</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Communicates openly with the team</td>
<td>4 3 2 1</td>
</tr>
<tr>
<td>2. Tells other team members what they need to know</td>
<td>4 3 2 1</td>
</tr>
<tr>
<td>3. Is willing to change opinion in the face of new evidence</td>
<td>4 3 2 1</td>
</tr>
<tr>
<td>4. Is open to new ideas and methods</td>
<td>4 3 2 1</td>
</tr>
<tr>
<td>5. Says so when he or she needs something from the team</td>
<td>4 3 2 1</td>
</tr>
<tr>
<td>6. Lets the team know where he or she stands</td>
<td>4 3 2 1</td>
</tr>
<tr>
<td>7. Is free with praise of others on team</td>
<td>4 3 2 1</td>
</tr>
<tr>
<td>8. Encourages other team members</td>
<td>4 3 2 1</td>
</tr>
<tr>
<td>9. Puts team welfare above personal considerations</td>
<td>4 3 2 1</td>
</tr>
<tr>
<td>10. Is willing to do more than is required</td>
<td>4 3 2 1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Interpersonal Contribution</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>11. Requests input from others</td>
<td>4 3 2 1</td>
</tr>
<tr>
<td>12. Is available to contribute in his or her area of expertise</td>
<td>4 3 2 1</td>
</tr>
<tr>
<td>13. Listens to other team members</td>
<td>4 3 2 1</td>
</tr>
<tr>
<td>14. Gives as much value to other team members’ skills as to his or her own</td>
<td>4 3 2 1</td>
</tr>
<tr>
<td>15. Is willing to compromise in order to accomplish tasks and solve problems</td>
<td>4 3 2 1</td>
</tr>
<tr>
<td>16. Gives evidence of understanding others’ viewpoints</td>
<td>4 3 2 1</td>
</tr>
<tr>
<td>17. Contributes to other team members’ success</td>
<td>4 3 2 1</td>
</tr>
<tr>
<td>18. Can accept a setback gracefully</td>
<td>4 3 2 1</td>
</tr>
<tr>
<td>19. Gets people together to discuss differences</td>
<td>4 3 2 1</td>
</tr>
<tr>
<td>20. Helps get the right people together to do a job</td>
<td>4 3 2 1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Task Contribution</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>21. Accepts responsibility for his or her area</td>
<td>4 3 2 1</td>
</tr>
<tr>
<td>22. Completes his or her part of tasks that involve other team members</td>
<td>4 3 2 1</td>
</tr>
<tr>
<td>23. Performs his or her function conscientiously</td>
<td>4 3 2 1</td>
</tr>
<tr>
<td>24. on improving his or her job skills</td>
<td>4 3 2 1</td>
</tr>
<tr>
<td>25. Makes observable effort to improve his or her skills</td>
<td>4 3 2 1</td>
</tr>
<tr>
<td>26. Seeks excellence in his or her task accomplishments</td>
<td>4 3 2 1</td>
</tr>
<tr>
<td>27. Stays with the job until it’s done</td>
<td>4 3 2 1</td>
</tr>
<tr>
<td>28. Follows up on ideas, projects, programs</td>
<td>4 3 2 1</td>
</tr>
<tr>
<td>29. Grasps new ideas quickly</td>
<td>4 3 2 1</td>
</tr>
<tr>
<td>30. Identifies areas of team weakness and gives feedback to the team</td>
<td>4 3 2 1</td>
</tr>
</tbody>
</table>
INFORMATION, MEDIA, AND TECHNOLOGY SKILLS – Information Literacy

Access and Evaluate Information (4.A)

Listerine: Miracle Liquid or Product in Search of a Purpose?
Essential Question: How can I weigh the credibility of sources of information?

Objectives:
- Review and analyze the claims of several different Listerine advertisements.
- Review and analyze material from several different sources that comment on the advertising claims made by Listerine.
- Determine the credibility of different sources that comment on the advertising claims made by Listerine.
- Understand the importance of detecting misleading advertising.

Students already will be familiar with Listerine and its ubiquitous claims that it “kills the germs that cause bad breath” and is effective against formation of dental plaque. Few will be aware of Listerine’s decades-long history of blatantly false advertising leading to a landmark U.S. Court of Appeals decision, Warner-Lambert Co. v. Federal Trade Commission, which the Supreme Court upheld in 1978. Even fewer will be aware of a more recent court decision holding that Listerine’s claims to be “as effective as flossing” were unsupported by scientific evidence and, in the opinion of the federal judge in that case, detrimental to public health. Students probably will assume that because Listerine kills germs it is, therefore, effective against bad breath, a logical fallacy.

The American Dental Association and other medical authorities have long said mouthwashes are not effective against bad breath.

Procedures:
1. Divide students into groups and distribute the advertisements to students.
2. Ask students to summarize what the ads are saying and what evidence was provided.
3. Assign one ad to each group of students, and have the students research the claims of the ads using primary, reliable sources.
5. Ask students to read the 2005 decision, McNeil-PPC Inc. v. Pfizer Inc.
6. In their groups, have student discuss the following questions
   a. What conclusions would you draw about Listerine’s advertising methods?
   b. Why do you think such methods are so effective?
   c. Do you think the court was right to take action against Listerine? Why or why not?
7. Ask students to create advertisements for Listerine with supported evidence and in a fair and balanced way.

This activity may be adapted to advertisements or current events related to the program area.
"Look Out for a Cold," 1941.
http://scriptorium.lib.duke.edu/dynaweb/mma/toothpaste/@Generic_BookTextView/2092;nh=1?DwebQuery=Listerine+in+%3Ec02%3E#X

"The Most Important Announcement we have Ever Made," 1937.
http://scriptorium.lib.duke.edu/dynaweb/mma/toothpaste/@Generic_BookTextView/2588;nh=1?DwebQuery=Listerine+in+%3Cc02%3E#X
MUSIC IN) MALE ANNCR: It's incredible news, and we just can't keep it bottled up.

Listerine's as effective as floss.

Listerine kills the germs that cause plaque.

So even if you don't floss like you should, now you can get the healthy benefits from simply rinsing.

MAN: Ah.

ANNCR: Listerine. As easy as rinsing.

As effective as flossing.

(REPEAT)

ANNCR: Listerine. As effective as flossing.

As effective as flossing.

So it's as effective as floss and it's so easy.

Even between teeth.

(MUSIC)

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INFORMATION, MEDIA, AND TECHNOLOGY SKILLS – Information Literacy

Use and Manage Information (4.B)

Researching to Solve a Problem
Essential Question: How can information be effectively used and managed?

Objective: Students will complete a problem-based research activity to gather and share information to solve a problem.

Procedures:
1. Select problem to research related to program area.
   a. Area in customer’s yard will is shady and will not grow plants
   b. Family of four needs to plan one week of meals on a given budget, and meet the nutritional and nutrient guidelines.
   c. Store sales are down by 10% from prior year.
2. Ask students to interpret, use and create information to create a solution to their problems.
3. Ask students to mind-map the information or key words needed to help look up information about the problem.
4. Have students write an overview of their problem.
5. Ask students to focus their topic, write a statement of purpose for solving their problem, and brainstorm questions to research.
6. Have students create source cards or notes for the sources they use.
7. Ask students to create a proposal for the solution to their problem, using appropriate visual and communication tools with proper citation.
   a. Price quote and job description, plant lists, and visuals of project and proposed plants.
   b. Menu Plan, shopping list, nutrition breakdown.
   c. Business or Marketing plan.
INFORMATION, MEDIA, AND TECHNOLOGY SKILLS – Media Literacy

Analyze Media (5.A)

Comparing Media Messages
Essential Question: How can I evaluate media depictions of an event, issue, or product?

Procedure:
1. Present multiple sources covering an event, issue or product:
   a. News clip from local news
   b. News clip from national news
   c. Clip from cable news show
   d. Newspaper Article
   e. Magazine Article
   f. Blog Post
   g. Podcast
   h. Reviews
2. Ask students to discuss and evaluate the following:
   a. Language
      i. What terms were used?
      ii. Were any used in an unusual way?
      iii. What speaking tone was used?
   b. Images
      i. What images were used?
      ii. What emotions do the image encourage?
      iii. What colors, shapes, and sizes are in the message?
      iv. Is there symbolism in the message?
      v. Do the images tell a story?
   c. Content
      i. What values are used in the message?
      ii. What ideas or perspectives are left out?
      iii. What is the worldview of the message?
      iv. What political ideas are in the message?
      v. How would you find what is missing in the message?
   d. Purpose
      i. Who is paying for this message?
      ii. Who is controlling the creation of this message
      iii. Why are they creating this message?
3. Ask students to compare/contrast the approaches used in the different depictions, and evaluate what biases are present in each.
INFORMATION, MEDIA, AND TECHNOLOGY SKILLS – Media Literacy

*Analyze Media (5.A)*

**Wiki Rubric**

Essential Question: How do I assess a wiki I have created?

<table>
<thead>
<tr>
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<th>4</th>
<th>3</th>
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<tbody>
<tr>
<td><strong>Purpose</strong></td>
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<tr>
<td>Our wiki has a clear purpose. Every part of the site enhances the purpose.</td>
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<td></td>
<td>Our wiki does not appear to have a purpose other than summarizing information.</td>
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<tr>
<td>Our wiki has a purpose. Every part of the site relates to the purpose.</td>
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<tr>
<td>We try to give your wiki a purpose, but our wiki is mostly just about a topic.</td>
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<tr>
<td><strong>Information</strong></td>
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</tr>
<tr>
<td>Our wiki covers content that is important for the purpose. Our information is thorough, balanced, and fair.</td>
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<td>Our wiki has very little information.</td>
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<tr>
<td>Our wiki has adequate information. We present the content fairly.</td>
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<tr>
<td>Our wiki has some gaps in information. At times, our wiki is one-sided in its presentation.</td>
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<tr>
<td><strong>Interpretation</strong></td>
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<tr>
<td>We use our research to make meaningful inferences and draw original conclusions about the topic. We connect our wiki’s content to broader topics and current issues or experiences.</td>
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<td></td>
<td></td>
<td>We do not draw any conclusions about the topic. We just repeat or paraphrase our sources.</td>
</tr>
<tr>
<td>We use our research to draw conclusions about the topic. We make connections between the information in our wiki and other topics.</td>
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<tr>
<td>We try to draw conclusions about the topic, but some of our conclusions are not based on facts.</td>
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<tr>
<td><strong>Sources</strong></td>
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</tr>
<tr>
<td>We get information for our wiki from a variety of credible sources. Readers can easily find out where we found our information.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>We get our information from some sources that may not be credible. We rarely tell where we found our information.</td>
</tr>
<tr>
<td>We get our information from credible sources. Readers can tell where we found our information.</td>
<td></td>
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</tr>
<tr>
<td>We get our information from just a few sources, and some of them may not be very credible. Readers cannot always tell where we found our information.</td>
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</table>
INFORMATION, MEDIA, AND TECHNOLOGY SKILLS – Media Literacy

Analyze Media (5.A)

Newspaper and Magazine Rubric
Essential Question: How do I assess a newspaper or magazine I have created?

<table>
<thead>
<tr>
<th></th>
<th>4</th>
<th>3</th>
<th>2</th>
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</thead>
<tbody>
<tr>
<td><strong>Focus</strong></td>
<td>My publication is all about one important topic. All parts of my publication are important, interesting, and about the topic.</td>
<td>My publication is about one topic. All parts of my publication are about the topic.</td>
<td>My publication is mostly about one topic. Most parts of my publication are about the topic.</td>
<td>My publication seems to be about more than one topic. Many parts of my publication are not really about the topic.</td>
</tr>
<tr>
<td><strong>Interpretation</strong></td>
<td>I synthesize information from many good sources and my own experiences. I make inferences. I draw important conclusions about the topic.</td>
<td>I synthesize information from more than one source. I make inferences. I draw reasonable conclusions about the topic.</td>
<td>I try to combine information from different sources, but some of my conclusions do not make sense.</td>
<td>The information in my publication appears to be copied from other sources. I do not draw any new conclusions.</td>
</tr>
<tr>
<td><strong>Research</strong></td>
<td>I get my information from many good sources and clearly explain what they are.</td>
<td>I get my information from good sources and clearly explain what they are.</td>
<td>I get most of my information from just one or two sources, and I do not clearly explain what they are.</td>
<td>I do not explain where my information comes from.</td>
</tr>
<tr>
<td><strong>Writing: Word Choice</strong></td>
<td>My writing paints pictures with words. My publication is clear and interesting. I use specific details and examples to describe my topic.</td>
<td>My writing is interesting. I use some details and examples to describe my topic.</td>
<td>My writing is somewhat interesting. I try to use details in my writing, but sometimes my writing is unclear.</td>
<td>My writing is predictable and ordinary. My writing is not specific or clear.</td>
</tr>
<tr>
<td>Writing: Style</td>
<td>Most of the writing in my publication is in a journalistic style that explains who, what, when, where, and how.</td>
<td>I try to write in a journalistic style, but sometimes I do not include important information.</td>
<td>My writing is not in a journalistic style.</td>
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<tr>
<td>Organization</td>
<td>The pieces of my publication are ordered in a way that focuses on the most important content. If needed, I include a complete table of contents to help readers find what they are looking for.</td>
<td>I try to organize my publication, but some pieces are organized in ways that do not make sense. I may need a table of contents or the one I included is inaccurate or incomplete.</td>
<td>My publication appears to be unorganized.</td>
<td></td>
</tr>
<tr>
<td>Conventions</td>
<td>I make no errors in spelling, punctuation, capitalization, or Standard English.</td>
<td>I make some errors in spelling, punctuation, capitalization, or Standard English that take away from meaning.</td>
<td>I make so many errors in spelling, punctuation, capitalization, and Standard English that readers have difficulty understanding my writing.</td>
<td></td>
</tr>
<tr>
<td>Layout</td>
<td>My publication is easy to read. I use both graphics and print on every page. My publication uses even spacing and margins.</td>
<td>I usually use both graphics and print on every page. My publication sometimes uses even spacing and margins.</td>
<td>I do not use both graphics and print on every page. My publication does not use even spacing.</td>
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<tr>
<td>Graphic Features</td>
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<tr>
<td>I use colors, boxes, lines, and fonts effectively to make my publication neat,</td>
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<tr>
<td>readable, and attractive.</td>
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<tr>
<td>I use colors, boxes, lines, and fonts to make my publication attractive.</td>
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</tr>
<tr>
<td>I try to use colors, boxes, lines, and fonts to make my publication attractive.</td>
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<tr>
<td>I do not use graphic features, or when I use them, they confuse the readers.</td>
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</table>
INFORMATION, MEDIA, AND TECHNOLOGY SKILLS – Media Literacy

Create Media Products (5.B)

Create Media Products
Essential Question: How can I create an effective media product?

Objective: Media products communicate information and ideas. Creativity is a large part of media products, however the creative ideas must accomplish the communication goal. Following a process for developing and evaluating media products to meet the specifications of the product.

Procedures:
1. Establish parameters for the media project. What is the topic of the project? What outcomes are expected of the media? What purpose does the media need to serve? What constraints must the students work within?
2. Present the media project needs to the students. Break the students into groups, and ask them to brainstorm ideas.
3. Ask groups to select the best idea from the brainstorm, considering how the idea matches the parameters of the media
4. Have students use the guidelines for the media format they are using, print, video, audio, or web

Guidelines for designing print media
Print is very effective in conveying information and facts, and less effective in generating strong emotional responses. Use words to describe the specific benefits that the reader gets when adopting your persuasive goal.

But recognize that pictures carry multiple meanings and are likely to create less resistance among readers than words.

1. Consider the rule of thirds in designing print media. 1/3 of your ad should be graphic elements (drawing, photograph, etc.) 1/3 of your ad should be written elements (headline, copy body) 1/3 of your ad should be white space.
2. Make sure that each of the different elements support each other. Select a typeface that reflects the target audience, tone and goal of your project. Think about how the headline and the artwork work together. Will your message be clear for readers who just glance at final product?
3. Don’t try to say too much in print. Print media needs to grab the reader’s attention and should communicate one clear idea.
4. Make use of a "visual signature" to present your organization’s name. In print, readers expect to have the author included in the message, usually with an address and phone number.
**Guidelines for designing video media**

Video is terrific at storytelling, and humor is an effective device for getting people's attention. Video is very effective in generating feelings and illustrating actions and behaviors, and not so strong in communicating specific facts.

1. Find a way to get the viewer's attention within the first 2-5 seconds.
2. Make your video visually exciting. Viewers watch video for the visual stimulation.
3. The need to condense messages often makes it necessary to use stereotypes and metaphors drawn from the world of everyday life.
4. Use no more than 65 words for a 30-second video. A 30-second ad has only 28 seconds of audio.
5. Without a script, individuals may interpret your plan for visuals differently. Prepare a storyboard for your video before going into production. Use a 4 x 3 rectangle for your frames and use as many frames as needed to convey the main visual ideas of the video.
6. The number of scenes should be planned carefully. You don't want too many scenes because this tends to confuse the viewer.

**Guidelines for designing audio media**

Audio is a very effective medium for conveying emotions and feelings, and not so strong on getting across factual information.

1. Consider the lingering impression the audio will make on the listener -- the sound of the voices, the music or sound effects, the imagination and humor-- are all important elements.
2. Consider using a jingle, a short song that contains your persuasive theme.
3. Script should be no longer than 65 words for a 30 second audio, or use the counting device of timing a script devised by radio station KABC in Los Angeles: five syllables equals one second.
4. Select your voices carefully. As far as your listeners are concerned, you are speaking only to them. Voices should use personal tones to convey warmth and a sense of rapport with the listener.
5. A sense of urgency is often used in audio. The first two to four seconds of a audio are critical in capturing the listener's attention.
6. Popular music is protected by copyright and cannot be used without paying (often costly) fees. It’s better to create original music for a student produced audio.

**Guidelines for designing a web media**

1. A strong call to action and a strong message are the most important elements of effective web media, and users want to interact with the site.
2. If you want to reach the maximum size audience, it's best to keep your site quite simple, since most users don't have a fast enough connection to handle advanced graphics and movies and sound.
3. Build in opportunities for interaction. People like to access pictures and information and web media can have layers of 'stuff' for readers-- but try and make the stuff interesting and relevant to the user.
INFORMATION, MEDIA, AND TECHNOLOGY SKILLS – Media Literacy

Create Media Products (5.B)

Multimedia Presentation Rubric
Essential Question: How do I assess multimedia presentations?

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<tbody>
<tr>
<td><strong>Content: Purpose</strong></td>
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<tr>
<td>My presentation has a purpose or theme. All the parts of my presentation say something meaningful about the purpose or theme.</td>
<td>My presentation has a topic. All the parts of my presentation say something important about the topic.</td>
<td>My presentation has a topic. Most parts of my presentation say something important about the topic.</td>
<td>My presentation’s topic is unclear. Many parts of my presentation seem off topic.</td>
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</tbody>
</table>

| **Content: Conclusions** | | | | |
| I use my background knowledge to interpret my research information and draw meaningful conclusions. | I draw reasonable conclusions from my research. | With help, I draw conclusions from my research. | I rarely draw conclusions from my research. |

| **Content: Key Points** | | | | |
| My presentation combines my research and the conclusions I have drawn into a few concise, important points. | My presentation describes the main ideas of my research and the conclusions I have drawn in a few points. | I try to describe the main ideas of my research in a few points, but my presentation may be too wordy or missing important information. | My presentation is too wordy or missing important information. |

<p>| <strong>Content: Supporting Information</strong> | | | | |
| I include appropriate, meaningful findings from credible research that support and explain my main points. | I include appropriate findings from research to support and explain my main points. | I try to include findings from research to support and explain my main points, but some information is incomplete or inaccurate. | I do not include enough information to support and explain my main points. |</p>
<table>
<thead>
<tr>
<th>Multimedia Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>I use graphics, video, sound, and other multimedia features effectively to support my key points and make my presentation more meaningful. I follow all copyright laws when I use multimedia features.</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Creativity</th>
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<tbody>
<tr>
<td>My presentation includes unusual and surprising features and components that excite my audience about my topic and add to the meaning.</td>
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<table>
<thead>
<tr>
<th>Organization</th>
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<tbody>
<tr>
<td>My presentation begins with a slide that introduces the theme in an interesting way, builds information in a logical way, and ends with a slide that leaves the audience with an interesting idea about the theme to think about.</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Oral Presentation</th>
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<tbody>
<tr>
<td>I am prepared and have rehearsed my presentation. I speak clearly and smoothly in an engaging way.</td>
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<thead>
<tr>
<th>Multimedia</th>
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<tbody>
<tr>
<td>We effectively integrate multimedia features throughout our wiki. The graphics, sound, and video are high-quality, support our wiki's purpose, and are appropriate for our audience.</td>
</tr>
<tr>
<td>Copyright</td>
</tr>
<tr>
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</tr>
<tr>
<td>We follow copyright laws for all content on our wiki.</td>
</tr>
<tr>
<td>We follow copyright laws for all content on our wiki, but we may make some minor errors.</td>
</tr>
<tr>
<td>We do not follow copyright laws for some of the content on our wiki.</td>
</tr>
<tr>
<td>We do not follow copyright laws for most of the content on our wiki.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Creativity</th>
</tr>
</thead>
<tbody>
<tr>
<td>We include surprising and original insights, ideas, language, and multimedia features to support our wiki’s purpose.</td>
</tr>
<tr>
<td>We include some surprising and original ideas on our site that relate to our wiki’s topic.</td>
</tr>
<tr>
<td>We try to include some surprising and original ideas, but sometimes our ideas take away from our wiki’s content.</td>
</tr>
<tr>
<td>We do not try to present our wiki’s content in original ways.</td>
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<table>
<thead>
<tr>
<th>Audience</th>
</tr>
</thead>
<tbody>
<tr>
<td>We anticipate and thoroughly address our audience’s questions and concerns in our wiki. We write in language our audience will understand. We define important technical terms.</td>
</tr>
<tr>
<td>We anticipate and answer our audience’s questions in our wiki. We write in language our audience will understand.</td>
</tr>
<tr>
<td>We try to answer questions in our wiki, but we have not thought carefully about what our audience wants or needs to know about our topic.</td>
</tr>
<tr>
<td>We do not think about our audience when we put information on our wiki.</td>
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<thead>
<tr>
<th>Collaboration</th>
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</thead>
<tbody>
<tr>
<td>We discuss our ideas and agree on the major components of our wiki. We respect each other’s work by offering support and constructive criticism. We agree on any changes that we make to the wiki before we make changes.</td>
</tr>
<tr>
<td>We work together to agree on the major components of our wiki. We respect each other’s work by not making changes without discussing them with the group.</td>
</tr>
<tr>
<td>We try to work together on our wiki. We usually respect each other’s work, but occasionally group members make changes without discussing them with the group.</td>
</tr>
<tr>
<td>The ideas on our wiki come from just a few people in our group. Ideas from other people are often ignored or dismissed. Some people make changes without discussing them with the group.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Site Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>The information on our wiki is divided logically into separate pages. Our links help people move easily to different pages, and help them find the home page.</td>
</tr>
<tr>
<td>The information on our wiki is divided logically into separate pages. We have links that help readers move to through the site without confusion.</td>
</tr>
<tr>
<td>We try to logically divide the information in our wiki, but sometimes the organization does not make sense. Some pages do not have links to help our readers move around in the site.</td>
</tr>
<tr>
<td>Our wiki is unorganized. Readers can easily get lost in the pages, or readers can not use links to go to other pages.</td>
</tr>
<tr>
<td><strong>Page Organization</strong></td>
</tr>
<tr>
<td>-----------------------</td>
</tr>
<tr>
<td>Each page in our wiki thoroughly describes a section of our topic. We effectively use headings and subheadings to help readers find what they are looking for.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Links</strong></th>
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</thead>
<tbody>
<tr>
<td>All the links on our wiki work, are appropriate for our audience, and relate to the purpose of our site.</td>
<td>All the links on our site work and relate to the topic of our site. All linked sites are appropriate for our audience.</td>
<td>All the links on our wiki relate to our site’s topic, but a few of the links do not work.</td>
<td>We have no links on our wiki, or our links are inappropriate or unrelated to the topic.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Language</strong></th>
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</thead>
<tbody>
<tr>
<td>We use powerful, concrete, and accurate words on our wiki. We use a minimum of technical language and include definitions, when appropriate.</td>
<td>We use accurate language on our wiki and define technical words, when necessary.</td>
<td>Some of our language is inaccurate, and we use too many technical words.</td>
<td>Our language is predictable and often inaccurate.</td>
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<table>
<thead>
<tr>
<th><strong>Conventions</strong></th>
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</thead>
<tbody>
<tr>
<td>We have no errors in spelling, capitalization, grammar, punctuation, or sentences.</td>
<td>We check our writing for accuracy in spelling, capitalization, grammar, and punctuation, and we do not have any errors that would confuse readers.</td>
<td>We check our writing for accuracy in spelling, capitalization, grammar, and punctuation, but sometimes we have errors that confuse readers.</td>
<td>We do not check our writing for accuracy in spelling, capitalization, grammar, and punctuation, and we have many errors that confuse readers.</td>
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<thead>
<tr>
<th><strong>Graphics</strong></th>
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<tbody>
<tr>
<td>A large photo or graphic in the top area on the first page shows why the publication’s main topic is important. The first page’s graphic gets readers interested in the topic. The graphics and pictures I use in the publication communicate important and interesting messages about the topic.</td>
<td>A large photo or graphic in the top area on the first page illustrates the publication’s topic. The graphics and pictures I use in the publication are about the topic.</td>
<td>A large graphic on the first page is only somewhat related to the publication’s topic. Most graphics and pictures I use in the publication are about the topic.</td>
<td>The large graphic on the first page is unrelated to the publication’s topic or missing. The graphics and pictures I use in the publication are unrelated to the topic.</td>
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<tr>
<td>Publication Features</td>
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<tr>
<td>I effectively include a variety of carefully created features appropriate for the publication, such as masthead, opinions, letters to the editor, advertisements, and cover. Every feature adds information about my publication’s topic.</td>
<td></td>
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</tr>
<tr>
<td>I effectively include some features appropriate for the publication. Every feature relates to my publication’s topic.</td>
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<td></td>
</tr>
<tr>
<td>I try to include features appropriate for the publication, but some features do not seem to relate to my publication’s topic.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I include very few features appropriate for my publication, and most features do not appear to relate to my publication’s topic.</td>
<td></td>
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</tbody>
</table>
INFORMATION, MEDIA, AND TECHNOLOGY SKILLS – Information, Communication, and Technology (ITC) Literacy

Apply Technology Effectively (6.A)

Website Review

Essential Question: How can a reader determine the reliability of information on the web?

Select a topic to research and review web sources. Justify why a source would be appropriate or inappropriate for research purposes.

<table>
<thead>
<tr>
<th>WEBSITE REVIEW QUESTIONS</th>
<th>YES?</th>
<th>DETAILS AND COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Purpose of Site</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is the site factual with resources cited?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are you reasonably sure this site is not a parody or intended to be humorous?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is the tone calm and fair? (Sites with extreme tones may not be good sources of information.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is the site free of advertising?</td>
<td></td>
<td></td>
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<tr>
<td>If there are ads, is it easy to tell the difference between ads and content?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is the site sponsored by any organizations?</td>
<td>Organizations Affiliated:</td>
<td></td>
</tr>
<tr>
<td>Is it clear what audience the site is intended for (for example, college students or young children)?</td>
<td>Intended Audience:</td>
<td></td>
</tr>
<tr>
<td>Is the intended audience appropriate for your intended use?.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is the site open to everyone (no age requirements, fees, passwords, or registration)?</td>
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</tbody>
</table>

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8 Adapted from CyberSmart.
### Accuracy of Information

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are sources cited for all facts and statistics?</td>
<td></td>
</tr>
<tr>
<td>Is there a bibliography?</td>
<td></td>
</tr>
<tr>
<td>Is the date the article, page, or site was created given?</td>
<td>Date Created:</td>
</tr>
<tr>
<td>Is the “last revised” date given?</td>
<td>Last Revised:</td>
</tr>
<tr>
<td>Is the date of the facts and information recent enough to be accurate?</td>
<td></td>
</tr>
<tr>
<td>Is the site free of spelling, typographical, and grammatical errors?</td>
<td></td>
</tr>
<tr>
<td>If the author didn’t check the spelling, you can be pretty sure the facts were not checked, either!</td>
<td></td>
</tr>
<tr>
<td>Do all the links lead to active pages (in other words, no dead links)?</td>
<td></td>
</tr>
</tbody>
</table>

### Ease of Use

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is the text understandable?</td>
<td></td>
</tr>
<tr>
<td>Do the titles and headings give a clear idea of the content?</td>
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<tr>
<td>Is there a “what’s new” feature?</td>
<td></td>
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<tr>
<td>Is there a site map?</td>
<td></td>
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<tr>
<td>Is there a tool for searching the site?</td>
<td></td>
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<tr>
<td>Do pages load quickly?</td>
<td></td>
</tr>
<tr>
<td>Are there links to other places within this page or Web site?</td>
<td>Links:</td>
</tr>
<tr>
<td>Does this site have enough information for your research project?</td>
<td></td>
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<tr>
<td><strong>Author Trustworthiness</strong></td>
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<tr>
<td>-----------------------------------------------</td>
<td>-----------------------------------------------------------------</td>
</tr>
<tr>
<td>Is the page’s domain extension .edu, .net, .org, .mil, or .gov?</td>
<td>Domain Extension:</td>
</tr>
<tr>
<td>Does the page’s domain extension reflect a blogging site (wordpress, blogger, blogspot)?</td>
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</tr>
<tr>
<td>Is the publisher of the site an organization you have heard of before?</td>
<td></td>
</tr>
<tr>
<td>Is the author identified by name? <em>Tip: If you see a tilde (~) in the URL followed by a personal name, it may be a personal site, not an official site.</em></td>
<td>Author’s Name:</td>
</tr>
<tr>
<td>Does the author provide his or her professional or educational background?</td>
<td></td>
</tr>
<tr>
<td>Does the author’s background match the topic of the page (for example, you might not want to use a page about sports medicine written by a rocket scientist)?</td>
<td></td>
</tr>
<tr>
<td>Has the site received any respected awards?</td>
<td></td>
</tr>
<tr>
<td>Is this site recommended by a site you trust (for example, a public library or a well-known newspaper)?</td>
<td></td>
</tr>
<tr>
<td>Can the author or organization be contacted if you have questions? <em>Tip: Look for “contact” links to an email address, street address, and/or phone number.</em></td>
<td></td>
</tr>
<tr>
<td>Do trustworthy sources have positive things to say about this author or source? <em>Tip: To find out, Google the author or organization’s name and read what others have to say.</em></td>
<td></td>
</tr>
<tr>
<td>Can you find another source to confirm what the author says about him or herself? <em>Tip: Google the name of the author and a related keyword from the site (for example, “John Smith” and “professor”).</em></td>
<td></td>
</tr>
</tbody>
</table>
LIFE AND CAREER SKILLS – Flexibility and Adaptability

Adapt to Change (7.A)

Responsibilities of the Follower
Essential Question: How do I contribute effectively as a follower?

Read and Discuss the following articles
The sooner we recognize and accept our powerful position as followers, the sooner we can fully develop responsible, synergistic relationships in our organizations. According to Ira Chaleff (The Courageous Follower, 2003), there are three things we need to understand in order to fully assume responsibility as followers.

1. **Understand our power** and how to use it. As followers, we have far more power than we usually acknowledge. We must understand the sources of our power, who we serve, and the tools we have to achieve the group’s mission. We have a unique vantage point as follower or team member, but we have to know that and use it.

2. **Appreciate the value of the leader** and the contributions he or she makes to forward the organization’s mission. We need to understand the pressures upon the leader that can wear down creativity, good humor and resolve. We can learn how to minimize these pressures and contribute to bringing out the leader’s strengths for the good of the group and the common purpose.

3. **Work toward minimizing the pitfalls of power** by helping the leader to remain on track for the long-term common good. We are all witness to how power can corrupt, and it takes courage and skill to speak up. We can learn how to counteract the dark tendency of power. Feedback to the leader is necessary for the new leadership styles to be effective.

Five Followership Patterns
Robert E. Kelley, in his article for HBR “In Praise of Followers” (1988), describes the behaviors that lead to effective followership. He defines two dimensions that underlie effective followership: the degree to which a person exercises independent, critical thinking, and the degree of active or passive participation.

- **Sheep**, as Kelley calls them, are passive and uncritical. These followers lack initiative and a sense of responsibility. They perform the required task and then stop.

- **Yes People** appear livelier but are equally un-enterprising. They depend on the leader for inspiration and can be aggressively deferential, even servile. Some leaders like them and can even form alliances with them that can stifle creativity and energy.

- **Alienated Followers** are critical and independent thinkers but take a passive stance. They are cynical but perform with disgruntled acquiescence. They seldom actively oppose or speak up.

- **Survivors** are those followers who go along with the leaders, usually because they believe “it is better to be safe than sorry.” They are adept at surviving change.

- **Effective Followers** perform with energy and assertiveness. They are critical, independent thinkers and will proactively challenge decisions. They are risk-takers and problem solvers. They can usually work without strong leadership.
There are four essential qualities of effective followers:

1. **They manage themselves well**: The key to being effective as a follower is paradoxically the ability to think for oneself. Followers also see themselves as equals to the leader they follow.

2. **They are committed to a higher purpose**: They work towards the purpose of the organization, and towards certain principles and values outside of themselves. If they see a misalignment with personal values, they may withdraw their support either by changing jobs or by changing leaders.

3. **They build their strengths**: They have high standards of performance and are continually learning and updating their skills and abilities. They seek out extra work and responsibilities gladly in order to stretch themselves.

4. **They take risks**: They are credible, honest and have the courage to speak up. They give credit where due, but also admit mistakes. They are insightful and candid and they are willing to take risks. They can keep leaders and colleagues honest and informed.

In information-age organizations, hundreds of decentralized units process and rapidly act on varied input within the design and purpose of the organization. This requires an entirely different relationship between leaders and followers.
LIFE AND CAREER SKILLS – Flexibility and Adaptability

Be Flexible (7.B)

Hunk of Junk

Essential Question: What happens when things change?

Purpose: To learn to be creative and work in teams. To think “out of the box” and be creative: This activity has specific application for a Business and Marketing class or a general application to all curricular areas. Students will be using available materials to create and market a product. The teacher may give the students parameters or a theme for their product, such as; “create a usable product to market to a teenage market” or may leave it open for the student’s creativity.

Materials: A box of “junk”. The teacher will need to get creative. Have the students bring in junk and place it in a large box prior to class. You may ask for small items that could only fit in a “shoe box” as an alternative.

Time: Two class periods.

This game involves creativity; design, production, pricing, marketing (advertising and promotion), and presentation of a “product” made from the items/junk brought in by the students or the teacher.

Day One Directions:
1. Organize your class in groups or “companies”.
2. Line students up to pick items. Have a representative from each group (company) pick an item and go to the end of the line and so on until all students have picked and until all items are gone.
3. Draw straws to see which company picks first.
4. Each company will pick one piece at a time.
5. Companies work on their “product”.
6. The company members will “manufacture” their product and prepare a 1-2 minute commercial that they will present to the entire group.
7. The teacher needs to monitor the appropriateness of the product and commercial. (I.e. no weapons, bombs, sexual references, etc.)
8. Props and signs may be used to support the product. ONLY pieces of the junk may be used for the product itself. All pieces of the junk must be used in some fashion. (poster paper, tape, pens, etc. are available.)

Day Two Directions:
1. Groups must give up one item they select, and one item that the teacher selects, or is selected by another group (in reverse order of first day’s selection).
2. Companies must adjust to their supply change and adapt their product to the new resources.

Day Three Directions:
1. Companies present their products.
2. Group discusses how the adapted to day two.
The teacher may be the judge or may ask for business partners, other teachers, administrators or parents to judge. Judging will be on a scale of 1-10 using the following criteria:

A. Product Originality
B. Marketing and Pricing Strategy
C. Commercial
D. Overall Customer Appeal
E. All Company members participating
LIFE AND CAREER SKILLS – Initiative and Self-Direction

Manage Goals and Time (8.A)

Personal Goal Setting
Essential Question: How do I reach and set goals?

Mind Tools
Goal setting is a powerful process for thinking about your ideal future, and for motivating yourself to turn this vision of the future into reality. The process of setting goals helps you choose where you want to go in life. By knowing precisely what you want to achieve, you know where you have to concentrate your efforts. You’ll also quickly spot the distractions that would otherwise lure you from your course. More than this, properly-set goals can be incredibly motivating, and as you get into the habit of setting and achieving goals, you’ll find that your self-confidence builds fast.

Achieving More with Focus
Goal setting techniques are used by top-level athletes, successful business-people and achievers in all fields. They give you long-term vision and short-term motivation. They focus your acquisition of knowledge and help you to organize your time and your resources so that you can make the very most of your life.

By setting sharp, clearly defined goals, you can measure and take pride in the achievement of those goals. You can see forward progress in what might previously have seemed a long pointless grind. By setting goals, you will also raise your self-confidence, as you recognize your ability and competence in achieving the goals that you have set.

Starting to Set Personal Goals
Goals are set on a number of different levels: First you create your "big picture" of what you want to do with your life, and what large-scale goals you want to achieve. Second, you break these down into the smaller and smaller targets that you must hit so that you reach your lifetime goals. Finally, once you have your plan, you start working to achieve it.

We start this process with your Lifetime Goals, and work down to the things you can do today to start moving towards them.

Your Lifetime Goals
The first step in setting personal goals is to consider what you want to achieve in your lifetime (or at least, by a time at least, say, 10 years in the future) as setting Lifetime Goals gives you the overall perspective that shapes all other aspects of your decision making.

To give a broad, balanced coverage of all important areas in your life, try to set goals in some of these categories (or in categories of your own, where these are important to you):

- **Artistic**: Do you want to achieve any artistic goals? If so, what?
- **Attitude**: Is any part of your mindset holding you back? Is there any part of the way that you behave that upsets you? If so, set a goal to improve your behavior or find a solution to the problem.
- **Career**: What level do you want to reach in your career?
- **Education**: Is there any knowledge you want to acquire in particular? What information and skills will you need to achieve other goals?
• **Family:** Do you want to be a parent? If so, how are you going to be a good parent? How do you want to be seen by a partner or by members of your extended family?
• **Financial:** How much do you want to earn by what stage?
• **Physical:** Are there any athletic goals you want to achieve, or do you want good health deep into old age? What steps are you going to take to achieve this?
• **Pleasure:** How do you want to enjoy yourself? - You should ensure that some of your life is for you!
• **Public Service:** Do you want to make the world a better place? If so, how?

Spend some time brainstorming these, and then select one goal in each category that best reflects what you want to do. Then consider trimming again so that you have a small number of really significant goals on which you can focus.

As you do this, make sure that the goals that you have set are ones that you genuinely want to achieve, not ones that your parents, family, or employers might want (if you have a partner, you probably want to consider what he or she wants, however make sure you also remain true to yourself!)

**Starting to Achieve Your Lifetime Goals**

Once you have set your lifetime goals, set a 25 year plan of smaller goals that you should complete if you are to reach your lifetime plan. Then set a 5 year plan, 1 year plan, 6 month plan, and 1 month plan of progressively smaller goals that you should reach to achieve your lifetime goals. Each of these should be based on the previous plan.

Then create a daily to-do list of things that you should do today to work towards your lifetime goals. At an early stage these goals may be to read books and gather information on the achievement of your goals. This will help you to improve the quality and realism of your goal setting.

Finally review your plans, and make sure that they fit the way in which you want to live your life.

**Staying on Course**

Once you have decided your first set of plans, keep the process going by reviewing and updating your to-do list on a daily basis. Periodically review the longer term plans, and modify them to reflect your changing priorities and experience.

**Goal Setting Tips**

The following broad guidelines will help you to set effective goals:

1. **State each goal as a positive statement:** Express your goals positively - 'Execute this technique well' is a much better goal than 'Don't make this stupid mistake.'
2. **Be precise:** Set a precise goal, putting in dates, times and amounts so that you can measure achievement. If you do this, you will know exactly when you have achieved the goal, and can take complete satisfaction from having achieved it.
3. **Set priorities:** When you have several goals, give each a priority. This helps you to avoid feeling overwhelmed by too many goals, and helps to direct your attention to the most important ones.
4. **Write goals down:** This crystallizes them and gives them more force.
5. **Keep operational goals small:** Keep the low-level goals you are working towards small and achievable. If a goal is too large, then it can seem that you are not making progress towards it. Keeping goals small and incremental gives more opportunities for reward. Derive today's goals from larger ones.
6. Set performance goals, not outcome goals: You should take care to set goals over which you have as much control as possible. There is nothing more dispiriting than failing to achieve a personal goal for reasons beyond your control. In business, these could be bad business environments or unexpected effects of government policy. In sport, for example, these reasons could include poor judging, bad weather, injury, or just plain bad luck. If you base your goals on personal performance, then you can keep control over the achievement of your goals and draw satisfaction from them.

7. Set realistic goals: It is important to set goals that you can achieve. All sorts of people (employers, parents, media, society) can set unrealistic goals for you. They will often do this in ignorance of your own desires and ambitions. Alternatively you may set goals that are too high, because you may not appreciate either the obstacles in the way, or understand quite how much skill you need to develop to achieve a particular level of performance.

SMART Goals:
A useful way of making goals more powerful is to use the SMART mnemonic. While there are plenty of variants, SMART usually stands for:

- **Specific**
- **Measurable**
- **Attainable**
- **Relevant**
- **Time-bound**

For example, instead of having “to sail around the world” as a goal, it is more powerful to say, “To have completed my trip around the world by December 31, 2015.” Obviously, this will only be attainable if a lot of preparation has been completed beforehand!

Achieving Goals
When you have achieved a goal, take the time to enjoy the satisfaction of having done so. Absorb the implications of the goal achievement, and observe the progress you have made towards other goals. If the goal was a significant one, reward yourself appropriately. All of this helps you build the self-confidence you deserve!

With the experience of having achieved this goal, review the rest of your goal plans:
- If you achieved the goal too easily, make your next goals harder.
- If the goal took a dispiriting length of time to achieve, make the next goals a little easier.
- If you learned something that would lead you to change other goals, do so.
- If you noticed a deficit in your skills despite achieving the goal, decide whether to set goals to fix this.

Failure to meet goals does not matter much, as long as you learn from it. Feed lessons learned back into your goal setting program.

Remember too that your goals will change as you get older. Adjust them regularly to reflect growth in your knowledge and experience, and if goals do not hold any attraction any longer, then let them go.

Key Points:
Goal setting is an important method of:
- Deciding what is important for you to achieve in your life;
- Separating what is important from what is irrelevant, or a distraction;
- Motivating yourself; and
• Building your self-confidence, based on successful achievement of goals.

If you don’t already set goals, do so, starting now. As you make this technique part of your life, you’ll find your career accelerating, and you’ll wonder how you did without it.
LIFE AND CAREER SKILLS – Initiative and Self-Direction

Work Independently (8.B)

Personal Leadership Skills Development (Adapted from Tom Siebold)
Essential Question: How can I build a personal leadership plan?

Objective(s): To build a leadership skills development plan. This activity can help bridge the gap between talking about leadership and actually doing something to improve leadership skills.

Activity Description: Explain to the participants that they will build a personal leadership development strategy. Take some time to discuss why this is valuable and what the students are to do with it. Then have them study the leadership skills below (provide a handout). Give the group a chance to add skills to the list. Once they have discussed the list, ask each person to individually select three that he or she feels need attention. Plug those three into the chart below and fill in the necessary information – an example is provided on the chart.

Leadership Skills

<table>
<thead>
<tr>
<th>Leadership Skills</th>
<th>Make meaningful decisions</th>
<th>Coach others</th>
</tr>
</thead>
<tbody>
<tr>
<td>Find a vision</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Establish team values</td>
<td>Manage conflict</td>
<td>Train for competency</td>
</tr>
<tr>
<td>Set Norms</td>
<td>Problem solve efficiently</td>
<td>Give productive feedback</td>
</tr>
<tr>
<td>Identify expectations</td>
<td>Set goals</td>
<td>Manage change</td>
</tr>
<tr>
<td>Nurture collaboration</td>
<td>Plan effectively</td>
<td>Assess performances</td>
</tr>
<tr>
<td>Build trust</td>
<td>Share information</td>
<td></td>
</tr>
<tr>
<td>Conduct effective meetings</td>
<td>Communication successfully</td>
<td></td>
</tr>
</tbody>
</table>

Leadership Growth Plan

<table>
<thead>
<tr>
<th>Leadership Skills to Improve</th>
<th>Leadership Skills to Improve</th>
<th>Growth Objective(s) for each skill</th>
<th>Activities</th>
<th>People who can help</th>
<th>Indicators of Success</th>
<th>Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example: Meeting Facilitation</td>
<td>To conduct team meetings where more people participate</td>
<td>1. Ask selected team members for honest feedback. 2. Have the H.R. Director critique a meeting</td>
<td>H.R. Director &amp; peers</td>
<td>15% increase of team members speaking at meetings by the end of the quarter.</td>
<td>1. Obtain feedback after the first three meetings. 2. Try at least one new strategy every two meetings.</td>
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</tr>
</tbody>
</table>
**Options:** Participants may select a partner to check each other’s progress. This helps people stay on task once the meeting or workshop is over.

**Added thoughts or considerations:** Since skill development is ongoing, this sort of simple skills development plan should be repeated every.
LIFE AND CAREER SKILLS – Initiative and Self-Direction

Be Self-Directed Learners (8.C)

How to do Reflective Research

Essential Question: How can I develop cognitive structures for self-directed learning?

1. Ask a question or identify an issue of concern. For example:
   - What happens when...
   - I’ve always wondered about...
   - What can I do differently to stimulate engagement in...
   - How can I...

2. Collect data relevant to the question or issue. Here are some ways to collect data:
   - Observe the situation and take notes -- it is important to have written documentation
   - Interview the persons involved – these can be formal or informal
   - Keep anecdotal records – brief stories that describe an incident or interaction.
   - Examine official records – report cards, health records, school records, etc.
   - Use surveys or questionnaires – ask students, parents, teachers for their information and/or opinions about the issue or question.
   - Take pictures – photos and/or videos that document evidence
   - Have students draw pictures, diagrams, mind-maps of their perceptions of the issue
   - Write journal reflections – this is very valuable because it encourages teachers to reflect and analyze as they are doing the project. Insights generated are very helpful in designing the action plan and stimulating new questions.
   - Audio tape conversations – informal conversations and/or interviews can be transcribed and analyzed for patterns and subtle meanings.
   - Analyze student work – important source of data that reflects effectiveness of teaching-learning interaction.
   - Encourage students to write reflections about the issue to provide different perspectives.

3. Analyze data that has been collected to identify themes and patterns that emerge. Reflect.

   Think about what you have observed, heard, read, written, documented. Ask yourself what does this all mean to me? What sense do I make of this? Notice anomalies. What stands out as unusual indicators that challenge my assumptions or expectations. Reflect on the original question in light of the data collected.

Look for patterns and relationships among the data – organize, compare, classify.

Notice how some information is related to other information using criteria that suggest themselves – these will vary according to the question and kind of data collected. Some examples of criteria: time frames (when and how often something happened), subject matter, participants, situations, level of emotional or cognitive engagement, kind of interactions, kind of results, etc. etc. Identify themes that begin to emerge in relationship to bigger issues; e.g., how learning is constructed by the learner, teacher leadership, teacher-

student (interpersonal) relationships, how organization and planning affect student learning, dynamics of change, how personal biases and assumptions influence practice.

**Formulate preliminary interpretations** – evaluate in terms of the original questions; be sure interpretations are based on data; verify interpretations with participants.

**Explore what others have said** about the issue or themes that are emerging – read current literature or other teachers’ research.

Share findings and interpretations with colleagues. This dialogue provides feedback and differing perspectives that help clarify and verify findings and interpretations.

4. Design, and implement an action plan based on findings. Be specific about goals – what do you want to accomplish, change, focus on, try to understand better; activities – what kinds of things will you do to accomplish goals; data collection and analysis during implementation -- what kinds of data that will be collected and used to evaluate effectiveness of the plan.

5. Evaluate implementation of action plan by collecting and analyzing data. The evaluation leads to the next questions that emerge from the project. These questions form the stimulus for the next level or cycle of reflective research.

*Note: Doing reflective research provides on-going, self-directed professional development, and continued cognitive development for teachers. Doing reflective research with students, (which is based on Model Lesson Plan) helps them develop more effective cognitive structures for on-going, self-directed learning.*

**Student Reflective Research**

This process can also be used with students to encourage self-directed learning in every content area.

Here is a simple way to summarize the steps of mini-research projects:

1. What do I want/need to know? (identify question, issue, or problem).
2. How will I find out? (collect data related to issue, set time line for collecting it).
3. What did I find? (analyze data by organizing, comparing, classifying, discussing).
4. What am I going to do differently based on what I found? (design and implement plan of action)
5. What did I learn from what I did? (evaluate implementation of plan, generate new questions).
LIFE AND CAREER SKILLS – Social and Cross Cultural Skills

Interact Effectively with Others (9.A)

How to Run an Effective Meeting

Essential Question: How do I make meetings matter?

Productive, valuable, and engaging meetings require a clear goal, an open dialog, and a strong leader. Here is how to make your meetings matter.

1. Make every meeting matter - or don't meet at all. Decide if a meeting is needed and invite only the necessary people. Massive amounts of valuable time are wasted simply because managers think that face-time is important, or because they've become accustomed to a particular routine. Emails are usually sufficient to give your team an update or a status report. If you need instant feedback from all participants, then email will not be as efficient as a face-to-face meeting.

2. Define goals and distribute agenda in advance. Create a structure for your meeting. Just stating the ideal result often inspires participants and makes meetings more productive. At the very least, it underscores a feature that every meeting needs: a goal. Before the meeting even begins, make sure everyone understands the objectives by writing an agenda.

3. Own your meeting, take charge and keep your meeting moving forward. Good meetings are products of good leadership. Take charge and make it clear that you intend to keep the discussion timely, useful, and relevant. Show your colleagues that you respect their time by making sure a clock or timer is visible to all. Staying on topic is also key to maintaining a schedule. If the conversation runs off the rails, refocus the group by saying something like: "Interesting, but I don't think we're advancing our goals here. If I could, I'd like to return to the agenda."

4. Get the constructive input you need from everyone present. Since the point of a meeting is two-way communication, it's crucial to get honest input from everyone. It's the meeting leader’s responsibility to make sure everyone is heard. To build consensus or come to a group decision, avoid wearing your opinion on your sleeve; it's easy for a leader to stifle a discussion if everyone assumes the outcome is already determined. Avoid the temptation to dismiss ideas immediately— even when they're terrible.

5. Close with an Action plan, try to make sure that everyone leaves knowing the next step. Also end the meeting by asking everyone whether they thought the meeting was useful and, if not, what could be done better next time.

6. Make sure that your meeting didn’t happen in isolation by letting the right people know what was decided and what will happen next. It’s easy to walk out of a meeting room, go back to your desk, and immediately forget every change, decision, and new idea that your group came up with. Make sure you have a system to keep track of what was decided and what assignments everyone agreed to take on so you can follow up and keep things moving, even if you don't send out complete meeting minutes.

Prepare for your meeting, which is often forgotten by many. Let all the participants give feedback without being embarrassed or insulted. An excellent tool for having a productive meeting is using "OARR": Objectives, Agenda, Roles & Responsibilities. First, your meeting should have an objective. If you are having a meeting to just impart information, don’t waste people's time with a meeting. Send them a newsletter. The objective should have an active component and if possible, a product to show for it: "Determine the quarterly goals for the team". The agenda is a list of the topics you’ll address to get to that objective, with a time limit to
keep you on track. For example "1. Review the status of last quarter's goals (15 minutes), 2. Round-table suggestions for goals (20 minutes), 3. Pick top 5 goals (10 minutes), etc.) For Roles and Responsibilities, determine who is running the meeting, who is keeping notes, and who will assign actions/"to do" items resulting from the meeting.

**Warning:** Make sure you start and finish the meeting on time.

**Things You'll Need:**
- **Updates** - If the flow of information is one way, send an email instead.
- **Agenda and Goals**
- **Timekeeper** - Makes sure the meeting starts and stops on schedule, reminds facilitator when agenda items are going over their allotted time.
- **Note Taker** - Records what was said and distributes minutes as needed.
- **Whiteboard Wrangler** - Writes ideas on the whiteboard during brainstorming sessions, makes sure every idea is recorded, whether or not it seems promising at first glance.
LIFE AND CAREER SKILLS – Social and Cross Cultural Skills

Work Effectively in Diverse Teams (9.B)

Group Activity Planner
Essential Question: How do I coordinate group activities effectively?

1. Name of Activity:

2. Person(s) in charge of this activity:

3. Other team members:

4. Description of the activity. This should include the educational value of the activity and the impact on the school day (if any). Be sure to include the goals of the activity.

5. Timeline for the activity.

6. Budget
   Materials:
   Custodial:
   Supervision:
   Communications/Marketing:
   Other:
9. Explain how you will evaluate the activity:

10. Other items:

8. Duties and responsibilities:

   Duty:                               Person(s) responsible:
   Duty:                               Person(s) responsible:
   Duty:                               Person(s) responsible:
   Duty:                               Person(s) responsible:
   Duty:                               Person(s) responsible:
LIFE AND CAREER SKILLS – Productivity and Accountability Skills

Manage Projects (10.A)

Project Management Introduction
Essential Question: What is project management?

Lesson Objectives
By the end of this lesson, students will be able to:
1. Describe the elements of a project.
2. Comprehend the nine knowledge areas in project management.
3. Evaluate the relationship of the five process groups.
4. Describe a project charter and its importance.

Lesson Plan Process
The lesson will begin with the handouts for this session. The teacher will explain the nine knowledge areas and the five process groups. The teacher will review the scope statement form. The teacher will discuss the topics involved with managing a project.

Group Activity
Project teams will be established at this time. Students will review the project’s objectives, requirements, acceptance criteria, boundaries, constraints, assumptions, milestones, and cost estimate and approval requirements. This is a teacher led activity, where the teacher explains each element and asks the students to identify those elements within the project.

Lesson One Handouts
The following handouts for the lesson are on the next pages:
• Project Management Charter
• Nine Process Areas of Project Management
• Five Process Groups of Project Management
• Preliminary Scope Statement
**Project Management Charter**

What is the project about?

What is the goal of the project?

What is in the scope of the project (what are we doing)?

What are the major milestones (big points of progress)?

Why you are doing the project?

What are the benefits of doing the project?

Do you have sponsor approval for the project?
The Nine Process Areas of Project Management
The nine process (knowledge) areas of project management are:

*Project Integration Management*
Coordinates the other areas to work together throughout the project.

*Project Scope Management*
Ensures that the project includes all of the requirements and no new requirements are added in a way that could harm the project.

*Time Management*
Ensures that the project is completed on schedule.

*Cost Management*
Ensures that the project is completed on budget.

*Quality Management*
Ensures that the project meets its requirements, or does what it is expected to do.

*Human Resource Management*
Includes all of the processes used to develop, manage and put the project team together.

*Communication Management*
Determines what information is needed, how that information will be sent and managed, and how project performance will be reported.

*Risk Management*
Involves identifying, managing and controlling the risk(s) of a project.

*Procurement Management*
Involves acquiring the materials and services needed to complete the project.
Five Process Groups of Project Management
The five process groups of project management are:

Initiating
Defines and authorizes the project.

Planning
Describes how the project will be managed.

Executing
Describes how the project groups work together to complete the work.

Monitoring and Controlling
Checks the progress of the project and corrects problems.

Closing
Formally closes each phase or project and receives approval of the project work for the phase or project.
Preliminary Scope Statement

Project Information

<table>
<thead>
<tr>
<th>Project Name:</th>
<th>Date:</th>
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<tbody>
<tr>
<td>Sponsor:</td>
<td>Project Manager:</td>
</tr>
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</table>

Objectives of the project:

Requirements of the project:

Boundaries (what will not be done with this project):

Assumptions (what we believe to be true about the project that affects our decisions):

Constraints (what things limit what we can do to complete the project):

Milestones (big accomplishments of this project that will help us measure progress):

Expected cost:
LIFE AND CAREER SKILLS – Productivity and Accountability Skills

Produce Results (10.B)

Professionalism is for Everybody
Essential Question: How does professionalism contribute to productivity?

Use the below as a prompt for class discussions from the Book, “Professionalism Is for Everybody” -- the five keys to being a professional:

1. **Character**
   - The Professional Choice, Integrity and Trust, Honesty, Truthfulness, Forthrightness, Trustworthiness, Being Responsible and Accountable, Being Diligent, Doing What Is Right, and Projecting a Professional Image

2. **Attitude**
   - The Professional Approach, Adopting a Serving Mentality, Seeking Responsibility, Determination, and Being a Team Player

3. **Excellence**
   - Pressing for Excellence, Continual Improvement, Being Attentive, and Following Instructions

4. **Competency**
   - Expertise, Performance, Personal Effectiveness, and Being a Good Communicator

5. **Conduct**
   - Professional Maturity, Manners Matter, Loyalty, Respect, Confidences and Confidentiality, and A Touch of Class
LIFE AND CAREER SKILLS – Leadership and Responsibility Skills

Guide and Lead Others (11.A)

Comparing World Leaders
Essential Question: What leadership styles are effective in what venues at what times?

Students will learn that different leadership styles are effective in different venues and at different times.

Steps To Complete the Activity
- Compare and contrast leaders in history (e.g., Andrew Jackson and Abraham Lincoln, Grant and Lee, Alexander the Great and Ghengis Khan, Martin Luther King, Jr. and Gandhi or any other leaders).
- Discuss the strengths and weaknesses of these pairs in terms of their leadership styles and effectiveness.
- Brainstorm the influence and importance of effective followers in the selection of world leaders.
- Discuss the effect of environment and opportunity in a leader’s rise to power.
- Debate questions about the best style of government from the perspective of these leaders.
- Create a poster, write a paper, conduct an interview with "the leader," or any other activity which reflects the students’ understanding of the character or leader.

Resources may include student’s texts, the Internet, research materials in the school library and neighborhood libraries.
Recognizing Leadership Qualities in Yourself
Essential Question: What are my leadership qualities?

Activity:
The purpose of this activity is for the students to discover their own leadership qualities. By examining past situations, the students should be able to discover new leadership potential within themselves.

- List ways they have been a leader in the school, the community, the church, the family, or other situations.
- Circle the roles they liked best.
- Write an explanation of why they liked the roles best and why they did not like other roles.
- In small groups analyze each other’s strengths and weaknesses.
- At the end write a short essay explaining ways to build on their strengths and limit their weaknesses as a leader. They should also consider future leadership roles in their lives.

Resources may include other people, personal diaries, or journals.
LIFE AND CAREER SKILLS – Leadership and Responsibility Skills

Guide and Lead Others (11.A)

Examining Leadership Styles
Essential Question: How do leadership styles affect a leader’s success?

By taking a look at successful leaders throughout history, the students will learn about different styles of leadership and how the styles influence the leader’s success.

- Choose a leader to study.
- Conduct research on the leader to determine his or her successes and failures. Also identify the leader's style of leadership.
- Present research to the class.
- Create a poster displaying the selected leader’s style of leadership.

Discussion
At the conclusion of the oral presentations, students should discuss the differences among the leadership styles of the leaders presented to the class. Which styles are most successful? Why? Which styles are least successful? Why?

Students may consult newspapers, textbooks, the Internet, and libraries.
LIFE AND CAREER SKILLS – Leadership and Responsibility Skills

Guide and Lead Others & Be Responsible to Others (11.A / 11.B)

Designing a Service Learning Program in Ten Steps

Essential Question: How do I create a successful service project?

The article on the next page, Designing a Service-Learning Program in Ten Steps, provides a good overview of how to plan for a service learning activity.

Some schools and colleges have a Service Learning Coordinator that would be of great use to you.

Designing a Service-Learning Program in Ten Steps

Abstract

Creating an effective service project or service-learning program requires careful planning. This effective practice describes ten steps that teachers, parents, after-school providers and those who work in community-based organizations can take to enlist youth in service. The ten steps are excerpted from Students in Service to America: A Guidebook for Engaging Students in a Lifelong Habit of Service, authored by the U.S. Department of Education, the Corporation for National and Community Service, and the Points of Light Foundation (September 2002).

Issue

Service-learning combines service objectives with learning objectives, with the intent that the activities change both the recipient and the provider of the service. This is accomplished by combining service tasks with structured opportunities that link the task to self-reflection, self-discovery, and the acquisition and comprehension of values, skills, and knowledge content.

Action

The following steps are helpful in creating an effective service project or service-learning program. While all steps are useful to consider, all need not be carried out or followed in the order presented. The planning and implementation of service and service-learning programs are dynamic processes, and projects vary.

Read through all steps before undertaking a project.

Include participating youth in as many phases as possible.

Step 1: Assess the Needs and Resources of Your Community and School

In selecting a project, consult with community members, civic groups, businesses, government officials, school personnel, and students to determine both the needs of the community and the available resources, including partnership opportunities. Find out who else is doing (or has done) something similar.

Step 2: Form Community Partnerships

Most successful service projects require forming partnerships. You can build on existing relationships and connections, or you can develop new ones with potential partners identified in Step 1. Be realistic about your resources, needs, and limitations, and make sure your goals are of mutual interest to all of your partners. Also be concrete about the roles and responsibilities of each partner organization.
Step 3: Set Specific Educational Goals and Curriculum
Determine what you expect the young people to learn. Even service and service-learning projects organized by community-based organizations or after-school programs should set specific educational goals. Establish what content objectives or standards will be addressed, and incorporate your service and learning objectives into lesson plans. Devise ways to measure and assess whether those goals are being met, including reflection and assessment activities. When evaluating student performance, assess their effort and mastery of the subject. Service outcomes may not be what are initially expected.

Step 4: Select a Project and Begin Preliminary Planning
Pick a project and determine how all partners can work together to achieve the desired goals. Try to determine your human, financial, physical, and intellectual needs and whether you need additional partners to provide the required resources. Be sure to identify people in your school or organization who can coordinate the project and maintain continuity from year to year.

Step 5: Plan Your Project in Detail
Set up a timeline, create a budget, and assign tasks. Think about how to include your partners in this process. As with any project, thorough planning, including the creation of schedules, benchmarks, budgets, evaluation and assessment tools, and documentation, can identify and correct many potential problems.

Step 6: Acquire Necessary Funding and Resources
If additional funds, goods, or services are needed, consider seeking assistance from local businesses, national corporations, parents, faith-based organizations, government programs (e.g., AmeriCorps, Senior Corps, Learn and Serve America, your State Education Agency), civic groups, and other community organizations or sources of federal, state, and local funds.

Step 7: Implement and Manage Project
Put your plan into action. Continually assess your project to determine what is working and what could be improved. Involve project partners in evaluating and improving your project.

Step 8: Organize Reflection Activities
Make sure students are thinking about their service experience on a regular basis (e.g. through journals or classroom assignments) and organize activities that allow students to analyze their service and see how their ideas, knowledge and perceptions are changing. Use such reflections to help assess and improve the project. You may want to use the on-line or printable Record of Service found at http://www.usafreedomcorps.gov

Step 9: Assess and Evaluate Your Service Program
Ensure that your evaluation assesses the outcomes of the service project for the youth, the community, and the organizations involved. Documentation and evaluation of the project will create a legacy for the individuals and organizations that participated in and benefited from your service activities. It will also point the way to the next project for your classroom, and may foster activities in other classrooms.

Step 10: Celebrate Achievements
Everyone likes to be recognized for a job well done. Recognition of students can help build habits of service and lead to a lifetime of community involvement. Don’t forget to recognize key community partners as well. Recognition may include: displays in school or online,
celebratory events such as ribbon cuttings or groundbreakings, visits by local officials, and participation in national recognition programs.
LIFE AND CAREER SKILLS – Leadership and Responsibility Skills

Be Responsible to Others (11.B)

Service Organizations

Essential Question: What are the local service organizations in my community and how are they making an impact?

Go to the following sites with your students:


Discuss:

1. What is the organization about?
2. What is the organization asking for people to do for it?
3. How will people do what is being asked?
4. Ask students to synthesize the steps needed to advocate for something.

Ask students to think of an issue that is important to them. Have them identify steps they would take to advocate for that issue.
# Washington Career and Technical Student Organizations

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<tr>
<th>CTSO</th>
<th>Serves</th>
<th>Contact Information</th>
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| Washington (DECA)                         | Any student enrolled in marketing education where there is a chapter can join DECA. | Executive Director: Shanna LaMar  
Phone: (425) 814-0856  
Email: Shanna@wadeca.org  
Website: www.wadeca.org |
| Washington Future Business Leaders of America (FBLA) | Students preparing for careers in business and business-related fields. | Executive Director: Judy Reynolds  
Phone: (360) 753-5666  
Email: judy@wafbla.org  
Website: www.wafbla.org |
| Washington Family Career and Community Leaders of America (FCCLA) | Any student enrolled in FACSE where there is a chapter can join FCCLA. | Executive Director: Dr. Debbie Handy, WSU  
Email: fccla@wsu.edu  
National Website: http://www.fcclainc.org |
| Washington FFA                            | Any student enrolled in agricultural education where there is a chapter can join FFA. | Executive Director: TBA  
Phone:  
Email: execsec@washington.org  
Website: http://www.washingtonffa.org |
| Washington SkillsUSA                      | Students who are preparing for careers in technical, skilled and service occupations, including health occupations. | Executive Director: Bruce McBurney  
Phone: (360) 923-1741  
Email: bruce.mcburney@skillsusawashington.org  
Website: http://www.skillsusawashington.org |
| Washington Technology Student Association (TSA) | Students enrolled in Technology Education classes | Executive Director: Ross Short  
Phone: (360) 629-1478  
Email: rshort@washingtontsa.org  
Website: http://www.washingtontsa.org |
| Washington Career & Technical Sports Medicine Association (WCTSMA) | Students in sports medicine courses | President: Patrick Olsen, ACT. AT/L  
Email: polsen@nkschools.org  
Website: www.wctsma.com |
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