Career Activity File

Employability Skills

Career Development Month
November 2003

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The Guidance Division of the Oklahoma Department of Career and Technology Education is pleased to provide the ***2003 Career Activity File*** to teachers and counselors. This booklet will provide some practical ideas and suggestions on employability skills, with an emphasis on problem solving and critical thinking.

The issue of basic skills required in the workplace was addressed in a national study conducted jointly by the American Society of Training and Development (ASTD) and the U.S. Department of Labor (DOL) called "Workplace Basics: The Essential Skills Employers Want."

According to the ASTD/DOL research, American employers have discovered that their workforces need a variety of skills that include, but are not limited to, reading, writing, and computation. Employers now are also looking for skills in areas such as learning to learn, **problem solving** and **critical thinking,** oral communication and listening skills, interpersonal and teamwork skills, and the social and personal management skills that demonstrate responsibility in job performance.

Problem solving is a daily, lifetime skill. Helping students develop strategies in order to become independent problem solvers is the goal of this publication. It's hard to solve a problem, however, unless we understand the problem.

An emphasis on critical thinking and problem solving is not new. In 1983 the National Commission on Excellence in Education, in their widely publicized report entitled *A Nation At Risk: . . .,* emphasized that "formal instruction in critical-thinking skills [must] be mainstreamed across the curriculum at all levels. Such curricular integration is especially important in middle schools . . . because students there are beginning the significant transition from concrete to formal cognitive operations."

This, indeed, makes sense. It seems unrealistic to attempt to fill students with facts without showing them how to think about the facts — that is, to fully comprehend, and be able to compare and evaluate ideas and information.

Educators might consider these questions when they are developing activities for their students:

1. How do teachers provide opportunities for students to learn and apply skills in critical thinking, problem solving, decision-making, and teamwork? How are these skills taught and used in classes through the curriculum?

2. What other activities or programs are offered that focus on these skills? (e.g., Future Problem Solving Program, Destination ImagiNation, Invention Conventions, etc.)

3. How do you help students consider future career possibilities?

Please duplicate and share the enclosed materials with parents, teachers, administrators, and others concerned with career development. You may view our Web site at www.okcareertech.org/guidance to download a copy of this booklet along with its past issues.

Career Activity File — Employability Skills

Workplace Basics: Skills Employers Want

Sources: The American Society for Training and Development and the U.S. Department of Labor

Beyond Basic Skills

A few years ago, basic skills meant reading, writing, and arithmetic. Now those skills are just a starting point. Take a look at the basic skills needed today in the workplace.

Learning to Learn	Workers need the ability to acquire new information and skills and apply them to their jobs.
Listening	Important for more than just following supervisors' instructions, good listening skills help workers understand the concerns of coworkers, suppliers, and customers.
Oral Communications	Workers must be able to respond clearly to concerns of their coworkers, customers, and suppliers.
Critical Thinking	Workers need the ability to evaluate the idea or thought.
Problem Solving	New styles of work organization will require all workers to analyze problems and come up with solutions.
Creative Thinking	The more flexible work becomes, the more creative workers' solutions will have to become — creative in the sense of originality of thought or imagination.
Self-Esteem	Supervisors told the researchers they want workers who are proud of themselves and their abilities.
Goal Setting/Motivation	Workers need the ability to set objectives and the persistence to achieve them.
Personal and Career Development	Ideally, companies hire workers for the long haul. The most valuable employees are those who understand the need to continually develop on the job.
Computer Knowledge	Workers need to be able to use electronic mail applications, Internet applications, publication applications, and other applications related to their position.

Interpersonal Skills	New employees must be able to get along with their suppliers, coworkers, and customers.
Teamwork	People in cooperative work teams need to know how to divide work equitably and effectively and work with one another to achieve team goals.
Negotiation	Workers need the ability to build consensus through give and take with their customers, coworkers, and supervisors.
Organizational Effectiveness	To be productive, employees must understand the company's business goals and how their jobs contribute to fulfilling those goals.
Leadership	Workers must be able to assume responsibility and direct their coworkers when necessary.
Competence in Writing	Workers must be able to examine, analyze, and merge information to communicate clearly the important points in writing.
Competence in Computation	Employees who can accurately use common mathematical concepts related to their work will be in high demand.
Competence in Reading	Employees need the ability to locate information and use thinking skills to understand the meaning of the written word.

Employability skills are the attributes of employees, other than technical competence, that makes them an asset to the employer.

Buck and Barrick, 1987

Source: Career Development Activities, Mid High/High School CS1102. Order by calling 1-800-654-4502.

Developing Employability Skills

Kathleen Cotton

Many researchers offer recommendations for increasing students' and workers' acquisition of employability skills.

These recommendations are drawn from Berryman 1988, 1989; Bhaerman and Spill 1988; Greathouse 1986; Kazis and Barton 1993; Lankard 1990; Neal 1983; SCANS 1992; Spill and Tracy 1992; Stasz, et al. 1990, 1993; VEW 1993; and Wentling 1987b.

Teachers:

1. Arrange the classroom in such a way that it replicates key features of actual work settings, and assign students tasks similar to those performed by workers in those settings.
2. Reinforce to students that employers value basic, higher-order, and affective employability skills highly — even more highly than job-specific technical skills.
3. Communicate to students that they have the ability to perform tasks successfully and that they are expected to do so; provide monitoring and encouragement to help them achieve success.
4. Demand good behavior in the classroom. This conveys high expectations and familiarizes students with workplace norms.
5. Express work values through classroom instruction. Model attention to quality, thoroughness, and a positive attitude.
6. Use democratic instructional strategies such as role playing/simulation, problem-solving exercises, and group discussion with students; keep the use of lectures and reward structures to a minimum.
7. Monitor and support students' work as a consultant or master craftsman would, relating to them as intelligent, promising employees and providing them guidance and feedback.
8. Adapt instructional strategies to the tasks being taught and to the students performing them; do not hold rigidly to texts or syllabi.
9. Individualize instruction as much as possible, making use of a range of materials in different media in response to students' differing learning styles.
10. Reach agreements with supervisors at learning sites so that the importance of employability skill development will be emphasized at both school and the workplace.
11. Help students build employability "profiles" or "portfolios" that provide a more accurate picture of the students' command of the skills and traits employers value.
12. Participate in professional development activities and/or enroll in classes that emphasize methods to teach employability skills.

Source: Northwest Regional Educational Laboratory. "Developing Employability Skills" [Online] July 2003. <http://www.nwrel.org/scpd/sirs/8/c015.html>.

Eight Keys to Employability

1. **Personal Values**
   Valued workers:
   - Are honest.
   - Have good self-esteem and a positive self-image.
   - Have personal and career goals.
   - Demonstrate emotional stability.
   - Exhibit a good attitude.
   - Are self-motivated.
   - Desire future education.

2. **Problem-Solving and Decision-Making Skills**
   Valued workers:
   - Are flexible.
   - Are creative and innovative.
   - Can adapt to change.
   - Can plan and organize work.
   - Can reason and make objective judgments.
   - Are multi-skilled.

3. **Relations with Other People**.
   Valued workers:
   - Work well with peers.
   - Accept constructive criticism.
   - Are team workers.
   - Are friendly and cooperative.
   - Are consistent in their relations with people.
   - Accept assignments pleasantly.
   - Are tactful.
   - Accept all types of people.
   - Respect the rights and property of other people.
   - Have leadership qualities.

4. **Communication Skills**
   Valued workers:
   - Ask questions.
   - Seek help when needed.
   - Notify supervisors of absences and the reasons for absences.
   - Clearly express themselves orally.
   - Listen well.

5. **Task-Related Skills**
   Valued workers:
   - Complete work on time.
   - Can follow oral, visual, written, and multistep directions.
   - Are not distracting or distractible.
   - Work neatly.
   - Stick with task and keep busy.
   - Are precise and meticulous.
   - Care for tools and materials.
   - Are accurate.
   - Constantly improve their performance.

6. **Maturity**
   Valued workers:
   - Work well without supervision.
   - Are reliable and dependable.
   - Don't let their personal problems interfere with their work.
   - Are willing to perform extra work and work overtime.
   - Show pride in their work and show initiative.
   - Remain calm and self-controlled.
   - Accept responsibility for their own behavior.
   - Demonstrate maturity in thought, actions, and deeds.
   - Evaluate their own work.
   - Use time wisely.
   - Are assertive when necessary.
   - Show self-confidence.
   - Are responsible for their own career path.

7. **Health and Safety Habits**
   Valued workers:
   - Observe safety rules.
   - Maintain a good work pace and production rate.
   - Practice good personal hygiene.
   - Dress appropriately and are well groomed.
   - Perform well under stress and tension.
   - Have appropriate physical stamina and tolerance for the kind of work they are doing.
   - Are in good health.

8. **Commitment to Job**
   Valued workers:
   - Are punctual and have good attendance records.
   - Observe all organization policies.
   - Consider their work more than a job.
   - Are interested and enthusiastic.
   - Want to learn more.
   - Exhibit loyalty to the organization and its employees.
   - Give their best effort consistently and strive to please.
   - Show concern for their future career with the organization.

Source: Career Development Activities, Mid High/High School CS1102. Order by calling 1-800-654-4502.

Planning a Team Meeting

Facilitating a team meeting involves many of the employability skills that businesses need. Students are in charge of many club meetings that occur during the school year. Many students are unsure how to lead or plan them. Have students plan a mock team meeting using the following statements to guide them in these procedures.

Team Preparation
- Develop meeting objectives, goals, and agenda.
- Assign responsibilities for preparing materials and leading discussions.
- Schedule meeting.
- Reserve meeting room.
- Invite appropriate personnel.
- Recognize the importance of forming teams with others whose abilities are complementary.
- Assign someone to take minutes of the meeting.

Team Collaboration
- Demonstrate commitment to and positive attitude toward team goals.
- Act as a responsible team member, completing assigned tasks in a timely and effective manner.
- Adapt effectively to changes in projects and work activities.
- Negotiate effectively to arrive at decisions.
- Provide constructive praise and criticism.
- Resolve conflicts.
- Attend scheduled meetings on time.

Meetings Facilitated and Conducted
- Make introductions.
- Set basic standards of conduct for the group.
- Review objectives and time frames with team members.
- Invite questions, comments, and group participation.
- Communicate effectively verbally and non-verbally with team members.
- Conduct meeting to achieve objectives within scheduled time.
- Determine appropriate action, time frame, and person accountable for identified tasks.
- Monitor time.
- Produce and distribute meeting minutes including decisions and next steps.
- Follow up on tasks delegated to others.
- Recognize and reward individual and team contributions.

Techniques for Effective Decision Making for Team Meetings
http://www.mindtools.com/pages/main/newMN_TED.htm
The techniques at this Web site will help make the best decisions possible with the information that is available. These decision-making tools provide a starting point in problem solving.

Source: Career Clusters Knowledge and Skills Booklet, National Association of State Directors of Career and Technical Education, 2003. http://www.careerclusters.org

Employability Skills On-Line

Transitions
Transitions is a specific school improvement process that requires schools to be accountable for every student. *Transitions* focuses upon helping students learn about themselves, learn about career possibilities, and then make connections between the two. It is unique in that schools credential students by validating each student's present performance in academics, employability skills, and career awareness/ exploration. *Transitions* is a vehicle for schools to meet or exceed the North Central Commission on Accreditation and School Improvement Standard.
http://www.nca.asu.edu/transitions/

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405-376-2461

Skills Search
O*NET, the Occupational Information Network, is the Department of Labor's comprehensive database. Its database contains information about employability skills for each job title. To match an occupation, select as many skills as you have or plan to acquire from one or more of the six skill groups.
http://online.onetcenter.org/gen_skills_page

On-Line Skill Assessments
A nonscientific assessment will provide scores on interpersonal skills, initiative, and dependability. http://www.coe.uga/edu/cgi-bin/cgiwrap/~rhill/new_owei/esa.pl

Check out this self-assessment on the following employability skills: communication, thinking, learning, attitudes and behaviors, and teamwork.
http://www.apprenticesearch.com/fptrades/profile_result.asp

WorkKeys
The *WorkKeys*® system helps students understand how to improve their skills for higher-paying jobs. *WorkKeys* will measure skills such as reading, math, listening, locating information, and teamwork — skills that employers feel are critical to job success. Taking the *WorkKeys* tests provides information on how to get a better picture of jobs the student is ready for and improve areas where his/her skills are weak. Using the student's individual score reports, along with input from employers, ensures that the school curriculum provides adequate work skills training to meet the needs of businesses. http://www.act.org/workkeys

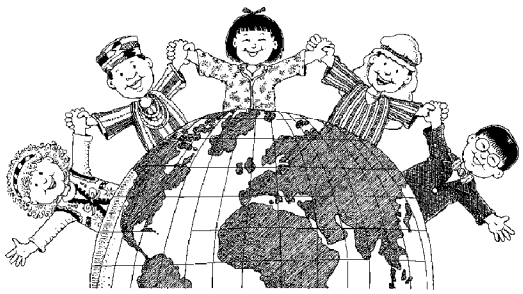
Learning basic employability skills can start as early as kindergarten. Remembering these rules will make your life richer and our world a better place. Copy and cut apart.

Kindergarten Creed

All I Really Need to Know I Learned in Kindergarten

By Robert Fulghum (Fulghum 1988)

Share everything.
Play fair.
Don't hit people.
Put things back where you found them.
Clean up your own mess.
Don't take things that aren't yours.
Say you're sorry when you hurt somebody.
Wash your hands before you eat.
Flush.
Warm cookies and cold milk are good for you.
Live a balanced life — learn some and think some and draw and paint and sing and
dance and play and work every day some.
Take a nap every afternoon.
When you go out into the world, watch out for traffic, hold hands, and stick together.
Be aware of wonder.



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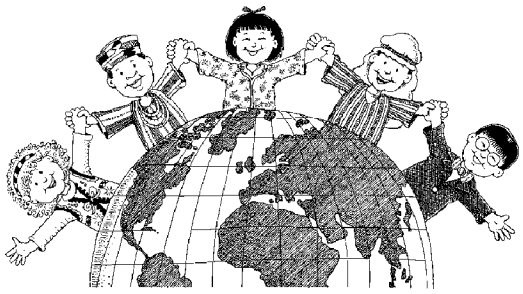


Products and Resources

Problem Solving

Grade Level: Junior High

Order Numbers:	In-State Price
TE1100 Teacher Edition	$7
TE3100 Student Edition	$8
TE7210 Problem Solving Video	$10

A systematic approach to problem solving is included in this TLA. Activities include papercut, egg drop package, and tower structure.

The Technology Learning Activities (TLAs) are eight-day activities. Each teacher edition contains background information, expected learner outcomes, suggested activities, suggested resources, instructional sequence, equipment, tools, supplies, pretest/posttest, test answers, and evaluation summary. The student edition of each Technology Learning Activity contains an introduction, summary of daily activities, pretest instructions, assignments to turn in, goals, words to know, expected learner outcomes, and objectives. Some activities include a design-and-build component: a package that will protect an egg from cracking and the tallest structure that will support a tennis ball.

Through the Jungle

Grade Level: High School – Adult

Order Number:	In-State Price
CS9003	$3

This job search guide for high school and adult students outlines the job search process and covers how to dress, interview, and prepare a resumé, among other skills.

Hands-On Thinking Skills: Applied Activities for the Twenty-First Century*

Grade Level: High School

Order Number:	In-State Price
TA1213 Teacher Edition (on-site duplication)	$25

The 18 activities in this book give the instructor an opportunity to focus students' attention on the process of thinking. Students will identify critical issues, analyze problems, draw conclusions, evaluate alternatives, transfer knowledge to new situations, etc. Most of the activities can be performed and completed during one class period, while others require the student to conduct the activity over a period of time.

Employment Skills for the 21st Century

Grade Level: High School – Adult

Order Numbers:	In-State Price
TA1210 Vol. I* – Manual	$50
TA8210 Vol. I – CD-Rom	$50
TA8211 Vol. II – CD-Rom	$50

This product is a collection of activities designed to give students practice in developing and applying in meaningful real-life settings both basic academic skills in reading, writing and computation, and the more advanced higher-order skills of problem solving, critical thinking, group interaction, and oral communication.

Company Name: Curriculum and Instructional Materials Center (CIMC)
Telephone: 1-800-654-4502
Internet Site: http://www.okcareertech.org/cimc

*Products can be borrowed from the free loan Oklahoma Department of Career and Technology Education Resource Center, 1-800-743-5163.

Employability Skills

Employers report that the reason employees are dismissed is not their lack of advanced skills, but that they have problems with one or more of the following employability skills:

a. works well with others
b. uses time wisely
c. on time/good attendance
d. follows directions
e. respects property of others
f. responsible

We know that habits which we start in school continue throughout our lives. Remembering that, place the letters of the employability skills that would eliminate the following bad habits.

1. ___ carves name in table
2. ___ complains about the teacher/ boss
3. ___ turns in projects late
4. ___ talks to friends on phone at work
5. ___ leaves first for lunch/break and returns last
6. ___ engages in horseplay on job
7. ___ takes supplies home
8. ___ stands around being idle
9. ___ calls in sick when not sick
10. ___ nonverbal communications
11. ___ completes forms without reading directions
12. ___ argues; ends up working alone
13. ___ doesn't read school/work handbook
14. ___ stays out late – sleeps in
15. ___ doesn't put tools/equipment back
16. ___ fails to perform duties
17. ___ sleeps on the job
18. ___ gossips about others
19. ___ records extra hours on time card
20. ___ dresses inappropriately

Related Subject

Language Arts

National Career Development Guidelines

Competency VIII
Knowledge of Skills Necessary to Seek and Obtain Jobs

Suggested Oklahoma P.A.S.S. Concept

Grades 5-12
Decision-making

Problem Solving

Have you ever said, "I can give my students a set of problems that all follow a certain model, and they'll do fine. The minute a problem is introduced that doesn't look like something they've seen before, they're lost."

Why is this a common occurrence? Students have not learned the process of problem solving. The definition of problem solving is "the process of obtaining a satisfactory solution to a novel problem, or at least a problem that the problem solver has not seen before."

If we have a responsibility to instruct in this area as well as in content, the simple question is, how? A problem-solving process directs problem solvers to:

1. Read about the situation.
2. Define the given situation or problem (which consists of reasoning, classifying, identifying series and/or relationships, creating analogies, and checking for consistency).
3. Define the "real" problem and create a "representation" of it.
4. Plan.
5. Do it.
6. Check, look back, and implement.

The process of problem solving has to be taught if we want to raise the level of students' problem-solving abilities. The following skills need to be described, modeled, and practiced:

Identify, locate, obtain, and evaluate missing information.
Learn on one's own, using thinking skills as **analysis.**
Generalize, simplify, and broaden perspectives; remain motivated and persevere.
Cope with fear, anxiety, and procrastination.
Know how one thinks.
Recognize interpersonal and group skills.
Apply communication skills.

To teach problem solving, teachers should:

- Model problem solving (making an occasional error or going down a blind alley is good!) so that students see the process is not straightforward or linear.
- Demonstrate there is more than one way to solve a problem so that students don't look for the one right way.
- Redescribe the problem in qualitative terms and apply relevant underlying principles;
- Help students create a plan for the solution, estimating the range in which the answer might lie.
- Show how to break the problem down into manageable parts, identifying and clarifying key concepts, drawing a diagram, translating the problem into a simpler form.
- Help identify and isolate factors that might lead to wrong solutions and develop strategies to counteract these problems.

Woods, D.R. "How might I teach problem-solving abilities?" Developing critical thinking and problem-solving abilities, No. 30 Jossey-Bass, 1987.

Problem Solving (continued)

Another method to help students with problem solving is the *Thinking Aloud Pair Problem Solving* (TAPPS) process that was introduced by Lochhead and Whimbey (1987). In this instructional method, two students work together to solve a series of short problems. The idea behind TAPPS is that students increase their analytical reasoning skills when they work through the problem-solving process aloud.

Students are paired and given a series of problems. The two students are given specific roles that switch with each problem: Problem Solver and Listener. The problem solver reads the problem aloud and talks through the solution to the problem. The listener follows all of the problem solver's steps and catches any errors that occur. For the listener to be effective, he or she must also understand the reasoning process behind the steps.

Sources: http://www.wcer.wisc.edu/nise/CL1/CL/doingcl/tapps.htm
http://wwwcsi.unian.it/educa/problemsolving/stice_ps.html

The Cognitive Domain: Bloom's Taxonomy – Analysis

Of all the thinking skills in *Bloom's Taxonomy,* analysis is required more in the problem-solving process. Analysis requires more than knowledge, comprehension, and application. It also requires an understanding of the underlying structure of the material. Analysis is the ability to break the subject down into its parts and identify the relationship between the parts.

Analysis Level Objectives

Interpret	Analyze	Differentiate	Compare
Contrast	Scrutinize	Categorize	Probe
Investigate	Discover	Inquire	Detect
Inspect	Classify	Arrange	Group
Organize	Examine	Survey	Dissect
Inventory	Question	Test	Distinguish
Diagram			

In the future, our students will encounter problems they have never faced before. The information will only be useful if they understand it well enough to know when to use it and how to apply it to new situations. Therefore, courses should be teaching higher levels of learning. Students should demonstrate that they are able to analyze a new situation and apply their new knowledge.

Examples of a Problem-Solving Model

Big6 Skills
http://www.big6.com/kids
The Big6 information problem-solving model is applicable whenever people need and use information. It integrates information search and uses skills along with technology tools in a systematic process to find, use, apply, and evaluate information to specific needs and tasks. The K-12 site contains helpful hints, templates, worksheets, songs, games, and fun to help students master essential information problem-solving skills.

Problem-Solving Competitions and Clubs

Whether competitions are integrated within the curriculum or as an after-school program, students will use problem-solving strategies and decision-making skills. Students will practice collaboration, listening, and working with ideas. When writing their ideas, students learn to clearly express exactly what they mean and to merge their research with their ideas. They also learn self-confidence and patience through both individual and team efforts.

ENGLISH

Name Scenario Writing Competition (Future Problem-Solving Program)
Grades 4th – 12th
Internet Site http://www.fpsp.org/
Information Students compose futuristic short stories related to one of the current year's topics. They focus at least 20 years into the future and examine what effects solutions developed now would have on future society. Teachers use the evaluation score sheet for evaluating their own students' work.

Name WordMaster
Grades 3rd – 12th
Internet Site http://www.wordmasterschallenge.com/
Information WordMasters encourages growth in vocabulary and verbal reasoning. The contest challenges students to complete analogies based on relationships among words they have learned. These analogies are based on special vocabulary lists, which participants are encouraged to study before each meet.

Students in Grades 9-12 focus on perceptive reading, sensitivity to language, and an appreciation of style. Texts for the Challenge can include short fiction, poetry, and essays.

SCIENCE/ENGINEERING

Name ToyChallenge
Grades 5th – 8th
Internet Site http://www.toychallenge.com/
Information This national toy design competition encourages girls and boys to have an interest in engineering and inspires them to pursue careers in this area. Design teams must find an adult coach and register; choose a theme from 10 toy categories; and create and submit for evaluation a visual presentation and operating instructions for their original toy or game. Boys and girls may participate, but at least half of the members of each team must be girls.

Note: This is a suggested list of many available competitions. Please research others to meet your needs.

Problem Solving (continued)

Name The Rube Goldbert Machine Contest
Grades High School for Competition (Any age for fun.)
Internet Site http://www.rube-goldberg.com/html/contest.htm
Information Groups are given an elementary challenge: something as simple as peeling an apple, sharpening a pencil, or putting toothpaste on a toothbrush. But instead of just "solving" the problem, students have to make the solution as complicated as possible with a minimum of 20 steps. An assemblage of ordinary objects and mechanical gadgets are linked together and somehow get to the desired goal.

It is suggested that students start with the end — what they are trying to accomplish — and work backwards, step by step. Students describe each step on a separate piece of paper. This allows them to change and edit their Invention Machine step by step.

GENERAL

Name Odyssey of the Mind
Grade K – 12th
Internet Site http://www.odysseyofthemind.com/
Information The team is required to solve a long-term problem that changes every year. Teams choose from five general categories: mechanical/vehicle, technical performance, classics, structure, and performance. Students learn lifelong skills such as working with others as a team, evaluating ideas, making decisions, and creating solutions while also developing self-confidence from their experiences.
Contact Marianne Zamor, President, 918-272-3936 or mzapcalc@aol.com

Name Destination ImagiNation®
Grades K – 12th
Internet Site http://www.destinationimagination.org/
http://www.nhom.org/ (New Hampshire home page)
Information Teams of up to seven students choose from one of six team challenges. Based on the team's interests, students will spend several months perfecting their solutions. New team challenges are created every year. Teams use art, technology, performance, and real world relevance.

Problem Solving (continued)

Name Chess Club
Grades 1st – 5th
Information The club provides an opportunity for children to enhance thinking strategies. Students meet once a week during the mid-day recess and are divided according to their ability into beginners, intermediate, and advanced.
Contact For more information, contact Patricia Johnson, Deer Creek Elementary, http://www.deercreek.k12.ok.us/es/dce/enrichment.htm
A summary of 14 research projects show how playing chess helps children in their school work.
http://www.ssi-school.com/chess%20research/ChessResearchSummary.pdf

Name Continental League
Grade 2nd – 12th
Internet Site

Overview	http://continentalmathleague.hostrack.com/cmlove.htm
Math	http://continentalmathleague.hostrack.com/
Science	http://continentalmathleague.hostrack.com/Natsci.htm
Social Studies	http://continentalmathleague.hostrack.com/Natsoc.htm
Language Arts	http://continentalmathleague.hostrack.com/Natlan.htm
Current Events	http://continentalmathleague.hostrack.com/Natcur.htm

Information This site provides a variety of core curriculum contests.

Name Future Problem-Solving Program
Grades 4th – 12th
Internet Site http://www.fpsp.org/ (Refer to page 19 for detailed information.)

TECHNOLOGY

Name TRIO ThinkQuest
Age 12-19
Internet Site http://depts.washington.edu/trio/comp/index.shtml
Information The TRIO ThinkQuest Competition is a contest open to participants in an Upward Bound and Talent Search Program. Students are encouraged to work in teams of two or three to build Web sites that could be used as learning tools by other students.

Problem Solving (continued)

Name ThinkQuest USA
Grades 3rd – 12th
Internet Site http://www.thinkquest.org
Information ThinkQuest Programs provide a highly motivating opportunity for students and educators to work collaboratively in teams to learn as they create Web-based learning materials and teach others. The "Library" currently contains more than 5,000 Web sites to search. The Internet sites were built by kids for kids to use and learn. Winners can receive cash prizes, computers, and networking resources.

ARTS/SCIENCE/TECHNOLOGY

Name Imagine Mars Project
Grades K - 12th
Internet Site http://imaginemars.jpl.nasa.gov/index3.html
Information Students explore their own community and decide which arts, scientific, and cultural elements will be important on Mars. Then they develop their ideal community, from an interdisciplinary perspective of arts, sciences, and technology. Lesson plans and resources are available to launch an exciting journey.

Name FIRST LEGO® League
Ages 9 - 14
Internet Site http://www.usfirst.org/jrobtcs/flego.htm
Information This competition combines a hands-on, interactive robotics program with a sports-like atmosphere. Teams consist of up to 10 players with the focus on such things as team building, problem solving, creativity, and analytical thinking. Each September, a new Challenge is unveiled. Over the course of eight weeks, students strategize, design, build, program, test, and refine a fully autonomous robot capable of completing the various missions.

MATHEMATICS

Name "Ole Miss" Problems of the Week
Grade Elementary – High School
Internet Site http://www.olemiss.edu/mathed/contest/index.htm
Information Problem of the Week includes elementary brainteaser, algebra, geometry, and middle school madness.

Problem Solving (continued)

Name Math League
Grade 4th - 12th
Internet Site http://www.mathleague.com/
Information The Math League specializes in math contests, books, and computer software designed to stimulate interest and confidence in mathematics for students. Contest problems are designed to cover a range of mathematical knowledge for each grade level. All of the problems on each contest require no additional knowledge of mathematics beyond the grade level they test.

Name Mathematical Olympiads
Grade 4th - 8th
Internet Site http://www.moems.org/
Information The highlights for students in this math club are the five monthly contests, scheduled from November to March. These contests provide an incentive for students to intensify their study of math. Contests consist of five nonroutine problems that are worked in the participating school. Students work alone without calculators.

Name Mathcounts
Grade Middle School
Internet Site http://mathcounts.org/
Information The MATHCOUNTS Foundation provides a complimentary copy of its *School Handbook* to middle schools across the country. Teachers and volunteers use these materials to coach student "Mathletes," as part of in-class instruction or as an extracurricular activity. After several months of coaching, participating schools select students to compete individually or as part of a team.
Contact Alicia Taylor-Helsley, OK State MATHCOUNTS Coordinator
Phone: (405) 528-1435, ahelsley@ospe.org

Name USA Mathematics Talent Search
Grades High School
Internet Site http://www.nsa.gov/programs/mepp/usamts.html
Information This free mathematics competition is open to all high school students in the United States. Students have a full month to work out their solutions. The problems range in difficulty from being within the reach of most high school students to challenging the best students in the nation. Students may use any materials — books, calculators, and computers, but all the work must be their own.

Problem Solving (continued)

Name High School Mathematical Contest in Modeling
Grade High School
Internet Site http://www.comap.com/highschool/contests/himcm/index.html
Information This competition takes place with your teams consisting of up to four students working on a real-world problem for a consecutive 36-hour period. Teams are allowed to work on the contest problem at any available facility and then submit their Solution Papers to be judged.

Name Mandelbrot Competition
Grade High School
Internet Site http://www.mandelbrot.org/
Information The Mandelbrot Competition is split into two divisions: advanced problem solvers and less experienced students. The format for either division is the same: the competition takes place in four rounds spaced throughout the school year, each consisting of an individual test and a team test. The questions cover a variety of non-calculus topics such as algebra, geometry, trigonometry, and probability, plus a few other topics like number theory or classical inequalities that may be less familiar.

Winner of the Future Problem Solving Program Slogan Contest – Junior Division

"Observing the past, fixing the present, and creating a better future."
C. Crachiola, Wass Elementary School, Troy, Michigan

Problem Solving (continued)

Future Problem-Solving Program Fact Sheet

What is the Future Problem-Solving Program?

The mission of the Future Problem-Solving Program (FPSP) is to design and promote positive futures using creative problem solving. FPSP can be used as an integral part of the school's curriculum or as an academic extracurricular activity or both. Students use creative and analytical thinking skills to research real world issues that affect our future.

What employability skills do FPSP participants learn? They will:

- Develop creative thinking abilities.
- Learn and employ problem-solving strategies.
- Develop teamwork skills.
- Improve oral and written communication.
- Exercise critical and analytical thought.
- Develop, use, and improve research techniques.

How does the program work?

Students or teams participate in one of three divisions: Junior – Grades 4-6, Middle – Grades 7-9, and Senior – Grades 10-12.

What kind of problem-solving activities does FPSP offer?

Community Problem Solving (CmPS)

Teams explore problems that exist within the school, local community, region, state, or nation. (See Web Sites for Community Projects, next page.)

A team of middle grade students in Texas focused on relieving the boredom and depression of adolescent hospital patients by creating and delivering "Boredom Buster Kits" to four area hospitals as well as three hospitals in Eastern Europe.

Team Problem Solving

Four-member teams research and apply the six-step FPS process to at least three different topics annually.

Scenario Writing

Students create a futuristic short story based on one of the five FPSP topics. The scenarios are limited to 1,500 words, and the setting must be 20 years into the future.

Non-Competitive Program

Designed for the regular classroom, this program introduces students to skills in creative problem solving.

For more information:
Future Problem Solving Program, (800) 256-1499
National Office – http://www.fpsp.org/
Texas Chapter – http://lonestar.texas.net/~lhutto/

Problem Solving (continued)

Web Sites for Community Projects

This federal Web site provides hundreds of resources for teaching and learning.
http://www.ed.gov/free

Sponsored by American Fidelity Education Services, this site contains a plethora of activities, lesson plans, and resources on current events and curriculum content items.
http://www.education-world.com

The Education World Web site offers a template for a model service learning project that includes cross-curriculum goals, activities, and strategies for assessment. Based on a project from Desert Sky Middle School in Arizona.
http://www.education-world.com/a_lesson/lesson154.shtml

The Nonprofit Prophets' Web site is sponsored by Pacific Bell to encourage students to investigate a problem area and create a w.w.w. resource page on the problem. Links to topics and resources for investigating problems and conducting topical research.
http://www.kn.pacbell.com/wired/prophets/index.html

Web site of the Corporation for National Service. Links to Learn and Serve America.
http://www.cns.gov

Learn and Serve America is a national program that provides funds to state educational agencies in order to encourage service learning in schools.
http://www.learnandserve.org

Opportunities in Work Clothes: On-Line Problem-Solving Project Structures

Problem solving is one of the most beneficial educational opportunities that we can offer students of any age. The Internet problem-solving activities can be either competitive or collaborative and can be used to extend cooperative problem-solving activity around the world.

Use the six different educational telecomputing activity structures: *information searches, electronic process writing, sequential creations, parallel problem solving, simulations,* and *social action projects* to design effective educational telecomputing experiences for your students.

Information Searches

In this type of on-line activity, students are provided with clues and must use reference sources (either electronic or paper-based) to solve problems.

> ***Elementary example*** — The project provided sets of clues about fictitious elementary schools in real places in the world, then asked participants to use whatever research tools they had available to deduce the "mystery city." Coordinated by Dorothy Whitney, Elsmere Elementary School in Delmar, New York.

Electronic Process Writing

Students post writings that they wrote for newspapers so that other students can offer feedback in an electronic version of process writing sessions.

Sequential Creations

Sequential creation involves progressive construction created with common written text or shared visual image.

> ***Written text*** — Students start a sequential text by writing the first few stanzas of a poem. They then send their work to students in a different school, who read the stanzas already written and add their own. This process continues as the text is shared with other schools.

> ***Visual image*** — These collaborative art projects are progressive construction of visual images. Each square on the grid is a small image created by a participating artist. View examples on the Internet site http://www.ibiblio.org/sito/

Problem Solving (continued)

Parallel Problem Solving

A similar problem is presented to students in several locations. The students solve the problem separately at each site and then share their successful problem-solving methods electronically.

> Teachers provide mathematical word problems to teams of students to solve, but the teams contain groups of students from different schools. Students must use telecommunications tools to coordinate problem-solving efforts, the selection of solutions to submit for evaluation, and the writing and presentation of these solutions according to a standard format.

Simulations

International Student Space Simulations is an exciting, dynamic teaching method that challenges students to design, construct, and live in a self-contained habitat for an extended period of time. It is a multilevel, interdisciplinary, action-based program that enables students to apply what they have learned.

> This simulation involves student astronauts who communicate with Mission Control technicians (also students) via two-way radios, modem-equipped computers, and/or VCR cameras and monitors. Inside the habitat, astronauts perform experiments, engage in simulated docking maneuvers, retrieve and repair satellites, and prepare meals. listserv@jhuvm.bitnet

Social Action Projects

Internet can serve as a context for "humanitarian, multicultural, action-oriented telecommunications projects" that involve the future leaders of our planet — our children.

> The Global Schoolhouse, Project Registry, is a clearinghouse of more than 750 on-line collaborative projects, organized by topic, grade, and project date. Schools can join an existing project or register their own. http://www.gsn.org/

Problem Solving (continued)

Problem-Solving Steps

1. **Define the Problem**
   The Situation
   The income I make is my weekly allowance of $10. The stereo I want to buy will cost $145. **What is the problem in the situation?** I want a stereo.

2. **Identify Options**
   Make a list of the things you can do about the problem. That option will then become your solution. For each solution, what are the rewards or what will happen next?

Possible Options	***What Will Happen Next?***
Try to earn more money.	Try to find a job.
Buy a cheaper stereo.	I want that stereo, not a cheaper model.
Borrow money from my parents.	I could pay them back $5 a week.
Ask for the stereo for a gift ..... (Christmas, birthday).	I don't want to wait that long.

3. **Identify Best Solution**
   Think about each option and pick/decide which option is the best for you. Think about what might happen if you do this.
   Solution Try to earn more money.
   Possible Results Stereo gets bought.

4. **Plan How to Achieve the Best Solution**
   Think about what you will have to do to get there and what resources you might need to use.
   Solution Try to earn more money.
   Resources Contact friends and neighbors.
   Plan Locate a summer job (mowing lawns, baby-sitting).

5. **Evaluate Results**
   If your problem is still not solved, go back to the list of options and choose another. Follow the same steps.
   Results Stereo is bought.
   Stereo doesn't get bought — Go back to Step 2.

6. **Evaluate the Entire Process**
   - Did you make the best choice from your options? If not, explain.
   - What choices, if any, did you make out of mere habit?
   - What choices were well thought out?
   - What choices were not well thought out?
   - What would you do differently next time?

Source: http://literacy.kent.edu/salt_fork/prob_solv/define_intro.html
Solve other problems on-line: Family/Work Issues, Workplace Issues, Community/Work Issues

Resources: Information Literacy in All Subject Areas
http://www.big6.com/showarticle.php?id=40

K-Adult Problem-Solving Steps http://www.big6.com

Problem-Solving Steps Worksheet

1. **Define the Problem**
   State the situation.

   What is the problem in the situation?

2. **Identify Options**
   Make a list of the things you can do about the problem. That option will then become your solution. For each solution, what are the rewards?

   Possible Options ***What Will Happen Next?***

3. **Identify Best Solution**
   Think about each option and pick/decide which option is the best for you. Think about what might happen if you do this.
   Solution
   Possible Results

4. **Plan How to Achieve the Best Solution**
   Think about what you will have to do to get there and what resources you might need to use.
   Solution
   Resources
   Plan

5. **Evaluate Results**
   If your problem is still not solved, go back to the list of options and choose another. Follow the same steps.
   Results

6. **Evaluate the Entire Process**
   - Did you make the best choice from your options? If not, explain.
   - What choices, if any, did you make out of mere habit?
   - What choices were well thought out?
   - What choices were not well thought out?
   - What would you do differently next time?

Source: http://literacy.kent.edu/salt_fork/prob_solv/define_intro.html

Problem Solving (continued)

Marshmallow Geometry

Activity

The purpose of this activity is for students to demonstrate desirable skills for interacting with and relating to others to describe the importance of cooperation among workers in accomplishing a task.

Activities

- Have the students pair up.
- Have a large supply of marshmallows and toothpicks available for the students to construct shapes.
- First, have one student in each group construct a simple geometric shape, and have the other student duplicate that shape.
- Second, have one student in each group arrange several marshmallows in a pattern on the table, then describe that pattern to his/her partner, who then duplicates that pattern based on verbal instructions from the first student.
  Note: The second student may ***not*** see the pattern.
- Discuss the activity by asking such questions as:

  What was the hardest part of the project that you did?

  What was the most enjoyable part?

  Did you like working with a partner? What did you like about it?

  Did you and your partner agree on what to do?

  Why is it important for people to work well together?

Evaluation

Students will be evaluated on how well they worked together, participation, and discussion.

Materials/Supplies

Small marshmallows, toothpick halves, paper plates, plastic knives, colored pens/pencils or crayons

Related Subjects

Art
Math
Language Arts

National Career Development Guidelines

Competency VII

Awareness of the importance of personal responsibility and good work habits

Suggested Oklahoma P.A.S.S. Concept

Elementary
Partnerships and Problem Solving

Resource: Career Development Activities, Elementary CS1100. Order by calling 1-800-654-4502.

Problem Solving (continued)

Jobs of the Future

Activity

"The more things change, the more they stay the same." Or do they? Some do and some don't. This activity will explore how occupations have changed from yesterday to today and how they may change in the future. Students will brainstorm ideas of jobs in the future and illustrate their visions on posters.

Activities

- Have the students choose an occupation for which they have a strong interest. Have them print the job description from *Oklahoma Career Information System (OCIS)* software or the *Occupational Outlook Handbook*.
- Lead a class discussion of how occupations have changed over the years.
- Have the students brainstorm possible technological advances of the future and how they might affect occupations in 5, 10, and 20 years.
- Ask the students to rewrite their job descriptions as if it were 20 years in the future. Do they see major changes (if so, what are they), or will the occupations stay the same?
- Have the students design advertisements or posters illustrating their selected occupations today and how they think they will be in the future. Display them in class.

Evaluation

- Students will be evaluated on their participation in class discussions, brainstorming advances, predictions for the future, and posters of their selected occupations today and in the future.
- Job descriptions of the future.

Materials/Supplies

Computer, *Oklahoma Career Information System (OCIS)*, paper, pencil, art supplies, poster board

Related Subjects

Art
Instructional Technology

National Career Development Guidelines

Competency VIII

Understanding how work relates to the needs and functions of the economy and society.

Suggested Oklahoma P.A.S.S. Concept

Middle School/Junior High
Brainstorming
Problem Solving

Resource: Career Development Activities, Middle/Junior High, CS1101. Order by calling 1-800-654-4502.

Problem Solving (continued)

Careers Requiring Problem Solving

Activity

Select two occupations from the list below that sound interesting to you and, using the resources, tell how they use problem solving in their daily work.

Occupations

Judge
Management Analyst
Detective
Industrial Designer
Psychiatrist
Auto Body and Related Repairer
Plumber
Meteorologist
Surveyor
Computer Scientist
Watch Repairer
Biological and Medical Scientist
Optometrist
Auditor
Architect

Occupation 1 _____

Occupation 2 _____

Related Subject

Language Arts

National Career Development Guidelines

Competency VI

Skills to locate, evaluate, and interpret career information.

Suggested Oklahoma P.A.S.S. Concept

High School
Research
Problem Solving

Resources: Occupational Outlook Handbook
www.bls.gov/oco
Oklahoma Career Information System

Critical Thinking Skills

It is unrealistic to fill students with facts without showing them how to think about the facts, how to comprehend, compare, and evaluate ideas and information. This could be accomplished through Critical Thinking, which is:

> " . . . the examination and testing of suggested solutions to see whether they will work." Lindzey, Hall and Thompson, 1978.
>
> " . . . deciding rationally what to or what not to believe."
> Norris, Stephen R. "Synthesis of Research on Critical Thinking." *Educational Leadership,* v 42, n 8, May 1985. 40-45.

Suggested Web Sites

Teaching and Self-Teach Material
http://www.edwdebono.com/
This Web site relates to most of Dr. de Bono's work in the teaching of "thinking tools," lateral thinking, and the communications framework. The information contained here is pertinent to people of all ages.

Review of Research Studies
http://www.nwrel.org/scpd/sirs/ (Index page)
http://www.nwrel.org/scpd/sirs/6/cu11.html
This summary is based on a review of 56 Critical Thinking documents. A total of 33 of these are reports of research studies or reviews. The other 23 are descriptive, theoretical, or guidelines documents or are concerned with research in areas other than the effectiveness of programs and practices.

The National Center for Teaching Thinking
"Lessons and Articles"
http://www.nctt.net/
The National Center for Teaching Thinking is an educational service organization providing workshops, staff development programs, and resources for schools and colleges interested in incorporating an emphasis on critical and creative thinking into their curriculum.

Questioning for Quality Thinking and Steps to Extend Student Thinking
http://ed-u-tech.net/models/faculty/minor/Critical_Thinking.htm
Written in Questioning for Quality Thinking using *Bloom's Taxonomy of Learning Opportunities.* Provides "Steps to Extend Student Thinking" in the classroom.

Critical Thinking (continued)

The Center for Critical Thinking
http://www.criticalthinking.org/k12/k12class/trc.html
The Center for Critical Thinking has created a wealth of information including instructional guides and lesson plans to help educators implement Critical Thinking in every aspect of their teaching.

Detective Fiction: Focus on Critical Thinking
http://www.cis.yale.edu/ynhti/curriculum/units/1995/1/95.01.01.x.html
Literature is an excellent source of instruction in critical thinking skills because it encourages the verbal exchange of ideas which develops thought processes. This curriculum unit presents the literary genre of detective fiction to entice, motivate, and instruct sixth-grade students. It will present a "whole-learning" approach, focusing on improving the critical thinking skills of students through the use of the mystery novel.

Holistic Critical Thinking Scoring Rubric
http://www.insightassessment.com/HCTSR.html
http://www.insightassessment.com/pdf_files/rubric.pdf
The use of the rubric by learners and teachers facilitates understanding of critical thinking, the use of the language of thinking, and focus on the skills and habits of mind that characterize a person who uses reasoned judgment to problem solve and to make decisions about what to do or what to believe.

Creativity, Problem Solving, Critical Thinking Lesson Plans and Resources
http://www.cloudnet.com/~edrbsass/edcreative.htm
The sites listed below provide lesson plans and resources for promoting problem solving, creativity, and critical thinking.

Games and Puzzles
http://www.kcmetro.cc.mo.us/longview/ctac/toc.htm

Rock or Feather: A Critical-Thinking Activity
http://sde.state.ok.us/home/defaultie.html
Click on the "Site Index" link on the left of the main page, then locate "Guidance and Counseling." Click on "Activities."
A simple activity can reveal much about the students you work with each day. Students make and defend their choices in this activity, called "Rock or Feather?" Are you more like a rock or a feather? summer or winter? the city or the country? Which word in each of those word pairs best describes you? your personality? your dreams? You have to choose one — the one that describes you the best — and you have to be able to explain why you made the choice.

Critical Thinking (continued)

Helping Children Analyze Thinking

One set of concepts children need to learn in order to take thinking apart (i.e., analyze it) is the elements of reasoning. We take our thinking apart to find problems in our thinking — and fix them.

Elements of reasoning include:

- Purpose of the thinking.
- Questions we are trying to answer.
- Information we need to answer the question.
- Inferences or conclusions we are coming to.
- Concepts or key ideas we are using in our thinking.
- Assumptions or ideas we are taking for granted.
- Implications and consequences of our thinking.
- Points of view we need to consider.
  (Example: What am I looking at? How am I seeing it?)

Used with permission from Critical Thinking Consortium, Dr. Linda Elder at http://www.criticalthinking.org

Winner of the Future Problem-Solving Program Slogan Contest – Middle Division

"Future Problem Solving: Where ordinary problems are changed into extraoradinary solutions."

T. Milko, Holy Family Regional School, Rochester, Michigan

A Checklist for Reasoning

1. **All reasoning has a <u>purpose</u>.**
   - Take time to state your purpose ***clearly***.
   - Distinguish your purpose from other purposes.
   - Check periodically to be sure you are sticking to your purpose.
   - Choose purposes you can actually achieve.
   - Recognize when other people have a different purpose from your purpose.

2. **All reasoning is an attempt to figure something out, to settle some <u>question</u>, or solve some problem.**
   - Take time to ***clearly*** and ***precisely*** state the question you are trying to answer.
   - Express the question in several ways to ***clarify*** its meaning.
   - Break a complex question into sub-questions.
   - Identify whether the question has one right answer, is a matter of mere personal opinion, or requires reasoned judgment.

3. **All reasoning is based on <u>assumptions</u>.**
   - Figure out what you are taking for granted. In other words, ***clarify*** your assumptions.
   - Determine whether what you are taking for granted is ***justified***.

4. **All reasoning is done from some <u>point of view</u>.**
   - Figure out what you are looking at and how you are seeing it. In other words, fill in these blanks: "I am looking at _____. And I am seeing it in the following way _____."
   - Figure out other ***relevant*** viewpoints or other ways of looking at the thing you are considering.
   - Figure out the strengths and weaknesses of your way of looking at the situation.
   - Figure out the strengths and weaknesses of other ways of looking at the same situation.
   - Try to be fair-minded in evaluating all points of view.

A Checklist for Reasoning (continued)

5. All reasoning is based on <u>information</u> and evidence.

- Gather information that is ***relevant*** to your question.
- Make sure all your information is ***accurate***.
- Make sure you have ***sufficient*** information to answer the question.
- Search for information that opposes your position as well as information that supports it.

6. All reasoning is expressed through, and shaped by, <u>concepts</u> and ideas.

- Identify key ideas and explain them ***clearly***.
- Consider different concepts or different ways of defining concepts.
- Make sure you are using concepts with care and ***precision***.
- Use concepts the way educated persons would use them.
- Notice when people misuse concepts in order to get you to do something they want you to do.

7. All reasoning contains <u>inferences</u>, interpretations, and conclusions.

- Make sure your inferences are ***logical*** in the situation.
- Figure out whether there are other possible inferences you might make.
- Figure out the assumptions that are leading to your inferences.
- Make sure you are ***accurately*** or ***logically*** interpreting the situation.

8. All reasoning leads somewhere or has <u>implications</u> and consequences.

- Think through the ***logical*** implications of your decisions.
- Search for negative as well as positive implications.
- Consider all possible consequences.

Analyze the Parts of Thinking of a Character in a Story

Complete the following statements about a character in the story entitled _____ _____.

1. The most important problem the main character faces in the story is . . .

2. The main purpose of the main character in the story is . . .

3. The most important information the main character uses in his or her thinking in the story is . . .

4. The main concepts or ideas the main character uses in his or her thinking are . . .

5. The main assumptions the main character makes (the things he or she takes for granted) are . . .

6. The main conclusions (or inferences) the character comes to is . . .

7. The main consequences of the main character's behavior are . . .

8. The point of view of the main character: She or he was looking at _____ _____ and sees it _____ _____.

Critical Thinking (continued)

Mission Impossible

Activities

Carlos, Jessica, Tamika, Jacob, Lajuan, and Allison are signing up for programs at their local *Career*Tech center. Each student chooses a different class. Using the clues below, figure out which students are enrolling in which programs.

	Graphic Comm.	Auto Technician	Horticulture	Marketing	Health & Medical Occ.	Law Enforcement
Carlos						
Jessica						
Tamika						
Jacob						
Lajuan						
Allison						

1. Allison and Tamika like to work outside.
2. Jacob asked the auto mechanic student for advice on his car.
3. Tamika and the horticulture student enrolled in English together.
4. Jessica, Lajuan, the marketing student, and the health care student carpool on Thursday.
5. Lajuan doesn't know a spark plug from a fuel injector.
6. Jacob can't stand hospitals.
7. Jessica helps her father change the oil in his car.
8. Lajuan and Jacob ate lunch with the law enforcement student.
9. Tamika enjoys watching television shows on criminal investigations.

Related Subjects

Math
Language Arts

National Career Development Guidelines

Competency IX
Understanding how to make decisions.

Suggested Oklahoma P.A.S.S. Concept

Elementary
Critical Thinking

Critical Thinking (continued)

What Position Should They Play?

Activities

As you read the description of each of the following workers, use the chart below to determine the occupation that connects most closely with the person's interests, personality traits, skills/abilities, and work habits. Determine the job for which each of the following workers is best suited. Then write the name of that occupation on the blank after the worker's name.

1. Tiffany enjoys working with people, and she is very outgoing. She likes to help others, and she is dependable. She likes keeping up with the latest styles.
2. Jerry enjoys fixing things. He is quiet, and he likes to work with his hands. He likes job security and enjoys working with tools. He is good at math.
3. Michelle likes to solve problems, and is very curious. She is able to stick to a problem and is able to concentrate for long periods. She enjoys figuring out how things work.
4. Casey loves art and is extremely creative. She is sensitive to details, and she likes to create new things. She likes to use her imagination, and she likes to work alone.
5. Ryan prefers organized tasks that remain the same rather than changing every day. He is careful and responsible with good verbal and writing skills. He likes to be supervised closely but fairly.
6. Maria likes to direct others. She is independent and responsible with a flair for numbers. She likes to feel pride in her accomplishments, and she wants a job that pays well.

	Drafter	Biologist	Commercial Artist	Cosmetologist	Business Executive	Cashier
Interests						
Personality Traits						
Skills/ Abilities						
Work Habits						

Tiffany _____ Casey _____

Jerry _____ Ryan _____

Michelle _____ Maria _____

Related Subjects
Math
Language Arts

National Career Development Guidelines
Competency IX
Understanding how to make decisions.

Suggested Oklahoma P.A.S.S. Concept
Middle School/Junior High
Critical Thinking

Critical Thinking (continued)

How To . . .

Activities

This is a 30-45 minute activity in which students must write concise instructions about how to complete a process. Divide the class into groups of 3 to 4 students, depending on the size of the class. Give each group a process, written on a 3 x 5 card or slip of paper. They must write a set of instructions. Examples of processes you may want to use include how to tie a tie, how to lace a shoe, how to reproduce a picture without looking at the picture itself, how to make a peanut butter and jelly sandwich, etc. Other processes may certainly be used, but there should be as many processes as groups to avoid repetition of the same process. Once the groups are given their tasks, the members of each group must collaborate in writing a set of concise, yet complete, instructions for completing their process (10-15 minutes). After the students are finished writing, give each group a set of instructions from another group. Now the fun begins! One by one, each group will attempt to complete the task described by another group. The process must be completed using only the instructions written down. No other communication is allowed!

Evaluation

The students will be measured by how easily the group performing the process accomplishes the task.

Materials/Supplies

- 3 x 5-inch notecards or slips of paper
- materials for "how-to" — may be items found in the classroom such as a shoe and lace, makeup, cell phone, etc.
- pen or pencil

Related Subject

Language Arts

National Career Development Guidelines

Competency IV

Understanding the relationship between educational achievement and career planning.

Suggested Oklahoma P.A.S.S. Concept

High School

Critical Thinking

careertech

Resource Center

Free Loan of Materials for Classroom and Professional Development Use

The Resource Center is a full-service library that loans print and multimedia materials to educators and students in Oklahoma. The scope of our collection includes career and technology education and curriculum, School-to-Work, teaching methods and learning styles, technology in education, business management, and more.

For more information, visit our Web site at **www.okcareertech.org/resrc.**

Materials are available in all the following subjects. Visit our Web site today to view the resources under each subject.

- Adult Literacy
- At-Risk, Dropout Prevention
- Audio Tapes 1993-2002
- Audio Tapes Through 1992
- Career Awareness K-8
- Career Clusters
- Career Exploration and Preparation
- Career – Program Development
- Classroom Management and Discipline
- College and Scholarship Guides
- Corrections Education
- Cultural Diversity & Ethnicity
- Disability Resources
- Distance Education
- Education Theory and Reform
- Educational Technology
- Electronic Books
- English Grammar
- Gender Equity/Sexual Harassment
- Grants and Grantwriting
- Health
- Integration of Vocational and Academic Education
- Job Search and Resumé Writing
- Leadership
- Mentoring
- National Board Certification Standards
- Presentation Skills
- Professional Image
- Quality/Teams
- School-to-Work
- School Administration
- Software through 1995
- Software 1996-2002
- Strategic Planning
- Teacher Excellence
- Tech Prep
- Videos 1995-2002
- Videos through 1994
- Violence Prevention in Schools

Resource Center/Oklahoma Department of *Career*Tech

1500 West Seventh Avenue
Stillwater, OK 74074-4364
Phone (405) 743-5162 Fax (405) 743-6809
We're open Monday through Friday
8 a.m. until 5 p.m. (September through May)
7:30 a.m. until 4:30 p.m. (June through August)
We're closed on state holidays and from noon until 1 p.m. each day.

Resource Center (continued)

Problem-Solving Materials for Free Loan
Oklahoma Department of Career and Technology Education Resource Center

370.157 EBE

CPS for kids / Bob Eberle, Bob Stanish, and Ginny Bates. — Waco, Tex. : Prufrock Press, c1996.
This booklet covers each step in the process, from brainstorming to ***problem finding,*** and includes accompanying activities and reproducible pages.

370.152 HAR

Classroom quickies / Anita Harnadek — Pacific Grove, Calif. : Critical Thinking Press and Software, c1978.
Check out this three-book series of classic mathematics and logic teasers. It is ideal for those days when your lesson plan does not quite cover the class period. Although each ***problem*** can be presented in 2-10 minutes, students will not always find the solution so quickly. Students have been known to work days to solve these intriguing problems.

370.157 TRE

Practice problems for creative problem solving / Donald J. Treffinger — Sarasota, Fla. : Center for Creative Learning, c1994.
This book will help students learn the Creative ***Problem Solving*** method from start to finish. Each step in the process, from brainstorming to ***problem finding***, is outlined in detail and includes accompanying activities.

371.395 BEL

Building a caring, cooperative classroom / James A. Bellanca. — Palatine, Ill.: Skylight Pub, c1991.
This book offers 30 easy-to-follow lessons to help K-3 students learn critical social skills integrated through language arts themes. The sections on friendship, responsibility, working together, ***problem solving***, and conflict resolution introduce the basic themes children need in order to build their character and work cooperatively in the classroom.

371.395 BRE

The middle grade teacher's handbook for cooperative learning / Terri Breeden and Janice Mosley. — Nashville, Tenn. : Incentive Publications, c1991.
The first portion of this handbook is on the teaching method of cooperative education and how it can be implemented easily in any classroom. The second portion contains actual lesson plans designed for the middle school teacher. Lessons include math, language arts, science, and social studies. Also included are seven lessons dealing with ***problem-solving***.

372.19 NAG

Learning through real-world problem solving / Nancy G Nagel. — Thousands Oaks, Calif. : Corwin Press, c1996.
A resource for educators interested in integrating curriculum, creating relevance in learning, and inviting their students to become involved in shaping the curriculum. Presents real-world ***problem-solving units*** created by four intern teachers, their mentor teachers, and their students.

Resource Center (continued)

Critical Thinking Materials for Free Loan
Oklahoma Department of Career and Technology Education Resource Center

302.224 ALB and BAK

Critical thinking activities to improve writing skills I / Karen Albertus — Pacific Grove, Calif. : Critical Thinking Press and Software, c1989.

Critical thinking activities to improve writing skills II / Michael Baker — Pacific Grove, Calif. : Critical Thinking Press and Software, c1991.

These materials offer teachers the opportunity to supplement their writing programs with easy-to-use, ***critical thinking*** activities applicable to Grades 4-8. Lesson plans, questioning strategies, and answer guidelines are given.

370.152 BLA

Organizing thinking / Sandra Black Parks, Howard Black, and MCCC. — Pacific Grove, Calif. : Critical Thinking Press and Software, c1992.

This publication is a handbook of lessons that integrate the teaching of ***thinking skills*** into elementary instruction. The central feature of all lessons is the use of graphic organizers (compare and contrast, sequence, part/whole relationships, classification, and analogy) to illustrate how information is related.

370.152 FOG

Patterns for thinking, patterns for transfer / Robin Fogarty and James A Bellanca. — Palatine, Ill. : 200 E. Wood St : IRI Group, c1989.

A cooperative team approach for ***critical*** and creative ***thinking*** in which teachers are trained in cognitive instruction.

370.152 FOR

180 icebreakers to strengthen critical thinking and problem-solving skills / Imogene Forte and Sandra Schurr. — Nashville, Tenn. : Incentive Publications, c1996.

Each icebreaker presents an intriguing factoid, a point to ponder, and a project to pursue. They are intended for use by teachers or parents to jump-start discussions and improve ***thinking skills***.

370.152 HAR

Mind benders-A2 (easy) **B2** (medium difficulty) / Anita Harnadek and Brooke Boering — Pacific Grove, Calif. : Critical Thinking Press and Software, c1989.

The educational objective of this game is to strengthen deductive ***reasoning skills*** for better academic performance.

Resource Center (continued)

Critical Thinking Materials for Free Loan
Oklahoma Department of Career and Technology Education Resource Center

513.2 HAR

Critical thinking activities for mathematics (middle school student) / Anita Harnadek — Pacific Grove, Calif. : Critical Thinking Press and Software, c1991.

513.2 HIL

Mathematical reasoning through verbal analysis (elementary students) / Warren Hill and Ronald Edwards — Pacific Grove, Calif. : Critical Thinking Press and Software, c1992.

The two publications introduce children to the application of analytical and ***critical thinking skills*** within the study of mathematics. The primary focus is to encourage students to develop analysis and reasoning skills applicable to a wide range of mathematical concepts.

371.953 ELD

The miniature guide to critical thinking for children / Linda Elder — Dillon Beach, Calif. : Foundation for Critical Thinking, c2003.

This publication introduces children to basic concepts in critical thinking, making these concepts accessible to them through simplified language.

Winner of the Future Problem-Solving Program Slogan Contest – Senior Division

"Today's Challenges, Tomorrow's Solutions."

Franklin High Team and Community Problem Solving, Franklin, Virginia

The 16 Career Clusters

Career Clusters is a grouping of occupations. The 16 career clusters provide an organizing tool for schools to arrange instruction and student experiences around 16 broad categories that encompass virtually all occupations from entry through professional levels. Oklahoma currently has sites working to implement Health; Information Technology; Law, Public Safety and Security; Manufacturing; and Science, Technology, Engineering and Mathematics. For a listing of those sites, go to www.okcareertech.org/stw/careerclusters.htm and click on the specific cluster.

 1	The production, processing, marketing, distribution, financing, and development of agricultural commodities and resources including food, fiber, wood products, natural resources, horticulture, and other plant and animal products/resources.
 2	Careers in designing, planning, managing, building, and maintaining the built environment.
 3	Designing, producing, exhibiting, performing, writing, and publishing multimedia content including visual and performing arts and design, journalism, and entertainment services.
 4	Business, Management and Administration careers encompass planning, organizing, directing, and evaluating business functions essential to efficient and productive business operations. Business, Management and Administration career opportunities are available in every sector of the economy.
 5	Planning, managing and providing education and training services, and related learning support services.
 6	Planning, services for financial and investment planning, banking, insurance, and business financial management.
 7	Executing governmental functions to include Governance; National Security; Foreign Service; Planning; Revenue and Taxation; Regulation; and Management and Administration at the local, state, and federal levels.

 8	Planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnology research and development.
 9	Hospitality & Tourism encompasses the management, marketing and operations of restaurants and other foodservices, lodging, attractions, and recreation events and travel-related services.
 10	Preparing individuals for employment in career pathways that relate to families and human needs.
 11	Building linkages in IT occupations framework: for entry level, technical, and professional careers related to the design, development, support and management of hardware, software, multimedia, and systems integration services.
 12	Planning, managing, and providing legal, public safety, protective services, and homeland security, including professional and technical support services.
 13	Planning, managing, and performing the processing of materials into intermediate or final products and related professional and technical support activities such as production planning and control, maintenance, and manufacturing/process engineering.
 14	Planning, managing, and performing marketing activities to reach organizational objectives.
 15	Planning, managing, and providing scientific research and professional and technical services (e.g., physical science, social science, engineering), including laboratory and testing services, and research and development services.
 16	Planning, management, and movement of people, materials, and goods by road, pipeline, air, rail, and water and related professional and technical support services such as transportation infrastructure planning and management, logistics services, mobile equipment, and facility maintenance.

HS Plan of Study

Student Name _____ **Date** _____

Student Signature _____ **Advisor Signature** _____

Parent/Guardian Signature _____

This plan of study should serve as a guide, along with other career planning materials, as you continue your career path. Courses listed within this plan are only recommended coursework and should be individualized to meet each student's educational and career goals. All plans should meet high school graduation requirements as well as college entrance requirements.

High School

9th Grade	10th Grade	11th Grade	12th Grade
English I	English II	English III	English IV
Algebra I or Geometry	Geometry or Algebra II	Algebra II, Trigonometry, or Pre-Calculus	Pre-Calculus, Trigonometry, or Calculus
Biology I	Chemistry I	Anatomy and Physiology or Physics	AP Biology or AP Chemistry
Geography/OK History	World History	American History	Economics/Government
Required Electives PE, Health, Art, Foreign Language, Language, or Computer Technology	***Required Electives*** PE, Health, Art, Foreign Language, or Computer Technology	***Additional High School Electives*** Introduction to Health Science Medical Terminology Sports Medicine Health Accounting Additional Science coursework	***Technology Center Options*** Health Science Technology Health Careers Certification Nursing Option Dental Assisting Medical Assisting
Career Electives Health or Health Academy Classes	***Career Electives*** Health or Health Academy Classes		

Postsecondary

Technology Center	Community College	College/University
❑ Practical Nursing ❑ Dental Assisting ❑ Emergency Medical Technician ❑ Occupational Therapist Assistant ❑ Physical Therapist Assistant ❑ Surgical Technology ❑ Advanced Unlicensed Assistant For more information, visit www.okcareertech.org	❑ Dental Hygienist ❑ Occupational Therapy Assisting ❑ Orthotic Prosthetics Technician ❑ Physical Therapy Assistant ❑ Radiology Technician ❑ Respiratory Care ❑ Biotechnology For more information, visit www.okhighered.org	❑ Dentist ❑ Nursing ❑ Medical Technologist ❑ Doctor of Osteopathic Medicine ❑ Pharmacist ❑ Physical Therapist ❑ Physician ❑ Veterinarian Science For more information, visit www.okhighered.org

Career Enhancement Options

Work-based Learning Options	Short-Term Training Options	
Job Shadowing: Internship/Mentorship: On-The-Job Training:	❑ Certified Nurse Aide ❑ Certified Medication Aide ❑ CPR/First Aid Certification ❑ Alzheimer's/Geriatric Care Training ❑ Phlebotomy ❑ Medical Coding	❑ EKG Technician ❑ Pharmacy Technician ❑ Central Sterile Processing Technician ❑ Veterinary Assistant ❑ Medical Transcriptionist ❑ Conversational Spanish

http://www.okcareertech.org/careerclusters.htm

Application Information

This information is often requested on job applications. Complete this information ahead of time to use as a reference.

Type of Position Desired _____
Date available to begin work _____
___ Full-time ___ Part-time ____ Temporary

Social Security Number_____

Education History

_____ School	_____ School
_____ Address	_____ Address
_____ Course of Study or Subject	_____ Course of Study or Subject
_____ Dates Attended	_____ Dates Attended
_____ Courses Taken Related to Job Skills	_____
_____ School Activities	_____ School Activities
_____ School Activities (cont.)	_____ School Activities (cont.)

(Examples: clubs, offices, sports, etc.)

Work Experience

_____ Name of Employer	_____ Name of Employer
_____ Address	_____ Address
_____ Position	_____ Position
Employed from ___ to ___	Employed from ___ to ___
_____ Duties/Responsibilities	_____ Duties/Responsibilities
_____ Duties/Responsibilities (cont.)	_____ Duties/Responsibilities (cont.)
_____ Special Skills and/or Experience	_____ Operating Equipment

References (Be sure to get permission from two people not related to you, whom you have known at least one year.)

_____
Name

_____
Address ZIP

_____
Area Code and Telephone Number

_____
Name

_____
Address ZIP

_____
Area Code and Telephone Number

Suggested Hints

- ✓ Read application before you begin to write. Each application is different.
- ✓ Use a fine-line, felt-tip, black pen.
- ✓ Print every word.
- ✓ Write neatly.
- ✓ When a question does not apply, print "N/A" (not applicable).
- ✓ Answer Salary Desired as "Open" or "Negotiable."
- ✓ Check your spelling.

What Employers Want

Basic Skills Needed in the Workplace

List activities and job-related experiences that you have accomplished in and out of school.

Reading and Computation

Communication Skills

Writing Skills

Computer Skills

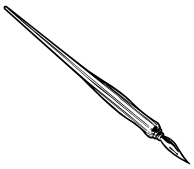
Interpersonal Skills

Leadership/Teamwork

Creative Thinking/Problem Solving

Notes/Questions to Ask

Oklahoma Department of Career and Technology Education, Guidance Division



Career *Poetry* Contest

November 2003

It's Not Just My Job, It's My Career!

Sponsored by the
Oklahoma Career Development Association (OCDA) and the
Oklahoma Department of Career and Technology Education

Eligibility: There are six divisions: Primary (Grades K-2), Intermediate (Grades 3-5), Middle Grades (Grades 6-8), Senior (Grades 9-12), Adult-Student (enrolled in school), and Adult (18 and older, not enrolled in school).

Theme: The poem should reflect the theme: "It's Not Just My Job, It's My Career!" Each poem's topic must relate to the theme.

Judging Criteria: Judging will be based on originality, creativity, development of national theme, appropriate form, execution, spelling, and grammar. **Only poetry judged as first-, second-, and third-place winners in the school contests should be sent for judging in the state contest.**

Poetic Form: Poems may be written in any poetic form, i.e., cinquain, diamante, free verse, haiku, limerick, metered, rhyming, blank verse, etc.

Size: Each poem should be typed or printed on a sheet of paper $8^1/_2$ by 11 inches in 12-point font.

Display: Poems are to be displayed/read in the student's school during National Career Development Month in November. Winning poems must be sent to the Oklahoma Department of Career and Technology Education by December 3.

Entry Form: Copy and complete the entry form below and attach to the back of each entry.

Mail Poems Chosen as School Winners to:
Oklahoma Department of Career and Technology Education, Guidance Division • 1500 West Seventh Avenue • Stillwater, OK 74074-4364.

Name _____ Grade _____ Age _____
(First MI Last)

Address _____
(City State ZIP)

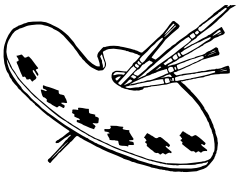
School Name _____ e-mail _____

Contact Person _____

School Address _____
(City State ZIP)

School Phone _____ County Name _____

All entries become the property of OCDA/ODCTE and will not be returned.
For further information, contact: Oklahoma Guidance Internet site http://www.okcareertech.org/guidance.
Choose elementary, middle school, or high school. Click on Poster/Poetry Contest.



Career *Poster* Contest

November 2003

It's Not Just My Job, It's My Career!

Sponsored by the
Oklahoma Career Development Association (OCDA) and the
Oklahoma Department of Career and Technology Education

Eligibility: There are six divisions: Primary (Grades K-2), Intermediate (Grades 3-5), Middle Grades (Grades 6-8), Senior (Grades 9-12), Adult-Student (enrolled in school), and Adult (18 and older, not enrolled in school).

Theme: The poster should reflect the theme: "It"s Not Just My Job, It's My Career!" Each poster's topic must relate to the theme.

Judging Criteria: Judging will be based on originality, creativity, and development of national theme. Attention will be focused on basic art principles and appropriate use of media and lettering. **Only posters judged as first-, second-, and third-place school winners should be sent for judging in the state contest.**

Lettering: Simple, bold lettering is preferred. Captions may be used to convey the message, attract attention, and achieve goals of clarity, vigor, and originality. All letters will be considered part of the design.

Media: Ink, pencil, collage, poster paints, magic marker, acrylic, photography, computer-generated graphics, oil, or cut and pasted paper.

NEW Size: **Each poster must be created in $8^{1}/_{2}$- by 11-inch format.**

Display: Posters are to be displayed in the student's school during National Career Development Month in November. Winning posters must be sent to the Oklahoma Department of Career and Technology Education by December 3.

Entry Form: Copy and complete the entry form below and attach to the back of each entry.

Mail Posters Chosen as School Winners to:
Oklahoma Career and Technology Education, Guidance Division • 1500 West Seventh Avenue • Stillwater, OK 74074-4364.

Name _____ Grade _____ Age _____
First MI Last

Address _____
City State ZIP

School Name _____ e-mail _____

Contact Person _____

School Address _____
City State ZIP

School Phone _____ County Name _____

All entries become the property of OCDA/ODCTE and will not be returned.
For further information, contact: Oklahoma Guidance Internet site http://www.okcareertech.org/guidance.
Choose elementary, middle school, or high school. Click on Poster/Poetry Contest.

Matching Skill to Occupation

Circle the career listed under each heading that best matches that employability skill.

Level: Elementary

1. **Leadership Skills**
   Painters Legislators Sociologists

2. **Competence in Writing**
   Telephone Operators Dental Laboratory Technicians Novelists

3. **Listening Skills**
   Psychologists Mail Clerks Photographers

4. **Competence in Computation**
   Accountants Professional Athletes Astronomers

5. **Teamwork Skills**
   Sculptors Tilesetters Firefighters

6. **Communication Skills**
   Priests Truck Drivers Parking Lot Attendants

7. **Competence in Science**
   Nutritionists Painters Choreographers

8. **Problem Solver**
   Musicians Detectives Janitors

9. **Decision Maker**
   Paralegals Mail Clerks Physical Therapists

10. **Competence in Reading**
    Editors Drafters Gardeners

(Can be adapted for older audience.)

Airplane Activity

Directions: Distribute Activity Sheet. Cut and fold paper airplane as directed. Tell students they will conduct the following experiments.

1. Make the airplane climb.
2. Make the airplane descend.
3. Make the airplane turn left.

Begin by brainstorming with the class on ideas of how to make the airplane climb, descend, and turn left. Write down every idea. Try to refrain from offering your own ideas and thoughts. Ask the students to make a guess on how to move the elevators to maneuver the airplane.

Answers:

Experiment 1

To make the airplane climb, fold both elevators up (fig. 1). Air hitting the elevators pushes the airplane tail down, causing the nose to point upward.

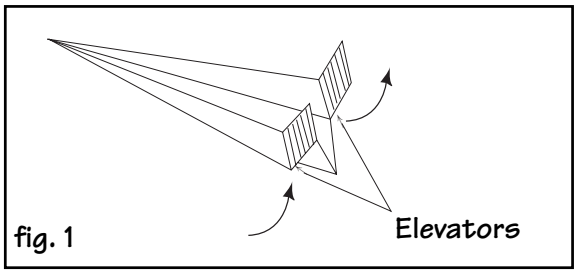


fig. 1

Experiment 2

To make the airplane descend, fold both elevators down (fig. 2). Air hitting the elevators pushes the airplane tail up, causing the nose to point down.

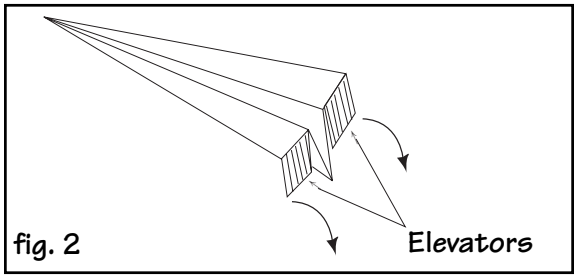


fig. 2

Experiment 3

To make the airplane roll to the left, fold left elevators up and the right elevator down (fig. 1).

Outcome: The paper airplane will roll or tilt to the left during flights.

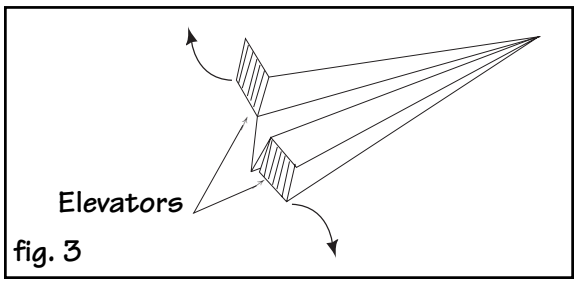
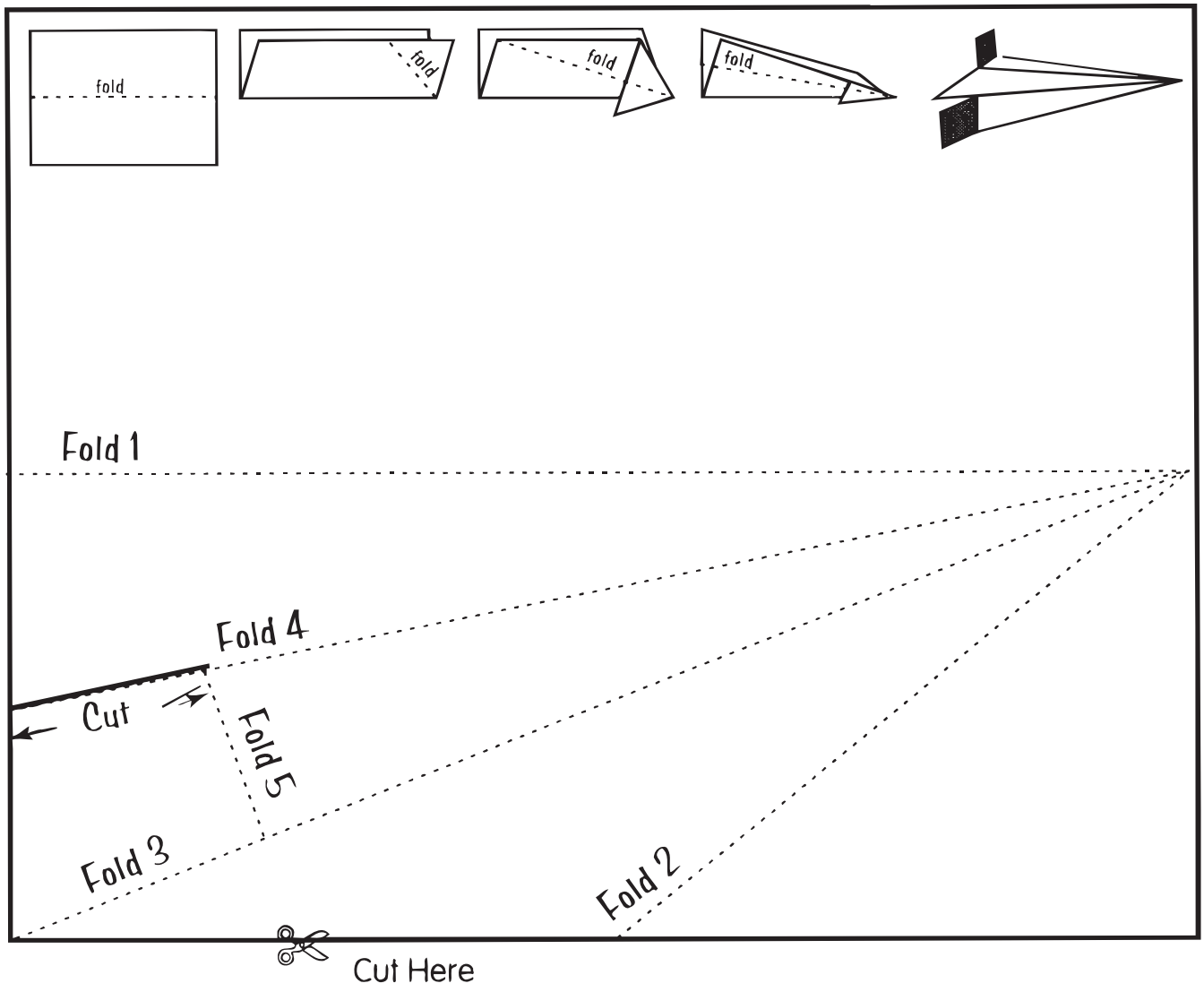


fig. 3

Take students to an outside play area. Allow ample time for experimentation with elevators folded in different directions. Ask students to consider what would happen if the elevators were in a neutral (flat) position. Take time to discuss what they did and answer any questions they have. Discuss the variety of career options related to airplane flights (i.e., navigators, agriculture pilots, commercial pilots, test pilots, executive pilots).

Airplane Activity

Directions: Cut out the rectangle along the solid line. Fold the rectangle into an airplane, following the five folding steps.



Occupational Tools

What tools would each person use on the job?
List several tools that these people would use to make their job easier.

Dentist	Photographer	Cosmetologist	Chef	Painter

Suggested Answers to Occupational Tools

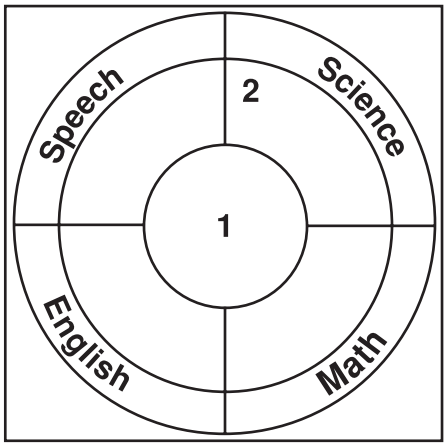
Dentist	Photographer	Cosmetologist	Chef	Painter
X-Ray Machine	Camera	Shampoo	Cookbook	Scraper
Drills	Film	Scissors	Measuring Cups	Sandpaper
Mouth Mirrors	Lenses	Razor Blades	Knives	Sponge
Masks	Tripods	Perms	Stove	Bucket
Gloves	Flash Attachments	Rollers	Spoons	Paint
Safety Glasses	Lighting	Combs	Mixer	Brush
Dental Floss	Darkroom	Hair Dryer	Pans	Tape

Optional Activity: Provide a worksheet for each student to complete in a certain amount of time. Then have students pair and share with another student for a specified time period. List their answers for all to see.

Bulletin Board Ideas/Assignments

Have students trace their hands five times on construction paper. Have them write a characteristic of a good worker on each and then cut the hands out. Use the handprints to make leaves for a tree, feathers for a bird, or outline a flag.

Use classified ads for the bulletin board background. In the center, include a want ad with clues for students to guess the occupation. Example: must be exp., good work habits, punct., ed. req., enjoy children, etc.

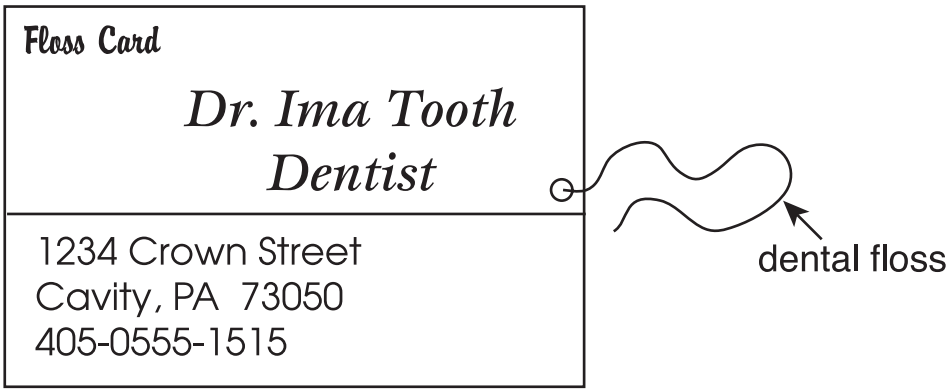


Place one occupation per slip of paper with enough slips to give one to each student. Students randomly pick an occupation. Provide each student the design shown at left on an 8½ x 11-inch paper. In area 1, students write the occupational title and draw the uniform and/or tools they would use to work in this occupation. In area 2, students write how that occupation would use each school subject.

Students will create their own business card. Have them collect samples from family members. Younger students can work on a 3 x 5-inch index card. Have students:

- pick a career
- add name, address, phone/fax number, business name, hours of business, area of specialty (optional – slogan).

Example:



Bulletin Board Ideas/Assignments (cont.)

- Make a table to show six cells across and nine rows down.
  Directions: Place a checkmark in the employability skills boxes that are necessary to do well in the clusters listed. (Optional: Students can provide examples of how the skill is used in the cluster.)

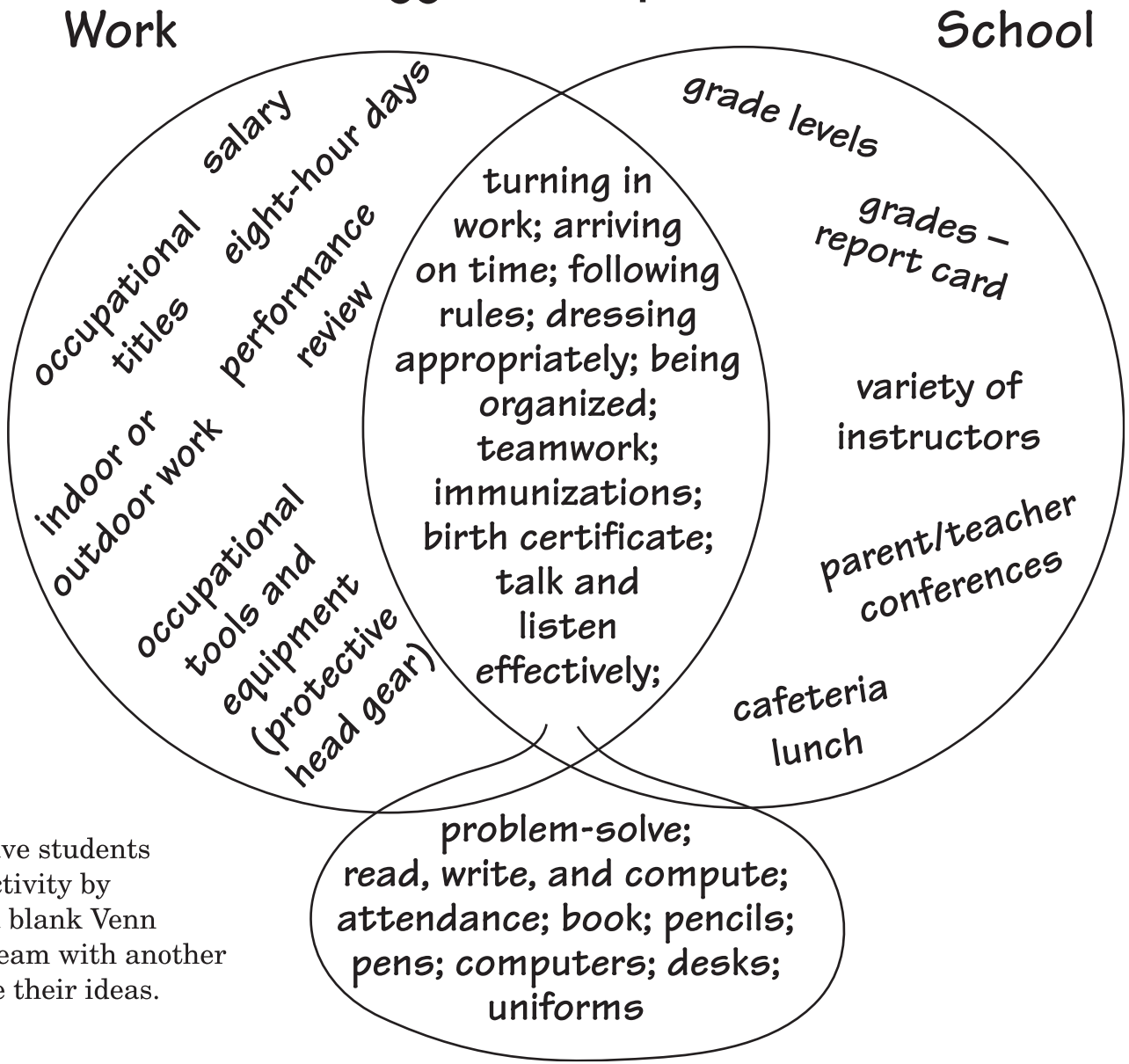
  Cell Heading for Clusters:
  - Health Science
  - Education and Training
  - Agriculture, Food, and Natural Resources
  - Architecture and Construction
  - Business Management and Administration
  - Law, Public Safety, and Security

  Row Headings for Employability Skills:
  - Communications Skills
  - Team Member
  - Dependability
  - Leadership Skills
  - Problem Solving
  - Math
  - English
  - Science
  - Well-Groomed

- Use classified want ads for the bulletin board background. Have students circle ads that require English, math, science, and social studies – each in a different color.

- Have students make a Venn Diagrahm on note paper. Have them compare "Work and School." Then ask them to pair with another person to share responses and ideas.

Comparing Work and School
Suggested Responses



Directions: Have students complete this activity by themselves on a blank Venn diagram, then team with another student to share their ideas.

Call a friend to tell them about *Career Activity File* on the Internet.

http://www.okcareertech.org/guidance/