News Reporters

Students watch a news program on television, write a report on one news item, and make an oral report to the class on that piece of news.

Objectives
Students will listen for understanding, summarize what they have heard in writing, and communicate the content orally to their classmates.

Work-Based Skills

- **KSAs:** Listen for understanding; Talk with respect; Follow instructions; Accurately perform work; Show dependability; GED skills read and write.
- **SCANS:** Listening—receives, attends to, interprets, and responds to verbal messages; Writing—communicates thoughts, ideas, information, and messages in writing; Speaking—organizes and communicates orally.
- **EFF:** Gather, analyze and use information; Listen actively; Convey ideas in writing; Speak so others can understand; View critically.

Background
This activity was initiated as a way to make students more aware of what was going on around them in the world and in their community. Skills necessary to complete the assignment are discussed during class before the assignment is given.

How to Prepare
Review communication skills. Remind students when assignments are due. Create a formatted news reporting sheet for students to use in organizing their note taking.

Active Learning Methods Used
Watching or listening to news report, writing, giving oral report, discussion.

What to Do During the Activity
1. As a homework assignment, students watch or listen to a news report and pick one news item to report on. They take notes on the news item using the format sheet.
2. In class, students take turns reporting what they have recorded from the news program, which they were watching (or listening to).
3. Classmates critique the reporting by writing an evaluation.
4. Usually there is a discussion on the reported story but not always. The teacher or student will ask questions or initiate conversation with all students.

Pre/Post Assessment

- **Pre-Assessment:** Students discuss whether or not they watch the news on television.
- **Post-Assessment:** Students review importance of listening for understanding.

Type
We do this exercise twice weekly.

Learners
Suitable for any level learner.

Time Frame
Assignment requires students to watch news presentation on television (usually 1/2 hour) at home or listen to news on the radio (if they can write fast enough). Students generally watch the evening or morning news and report they watched the news anywhere from 1/2 hour to 1 hour.

Room Set-up
Students stand up at their table or go to the front of the room to report.

Media Equipment
Television or radio (for students at home).

Learner Handouts
Format sheet.
Evaluation by Learners
Students critique classmates by writing an evaluation of each report.

Reinforcement/Generalizations
News reporting is assigned twice weekly. Communication skills are reinforced daily.

Comment
Students are generally competitive beings and mine are regularly trying to outdo the others by reporting the best or most unusual stories. This activity helps the students become more aware of the need for communication skills, and it makes them more aware of what is going on in their community.
Travel Geography

Each student will choose a travel destination from travel brochures and explore the geography of that specific place. Students fill out a study guide concerning the location, environment, and physical features of their chosen travel destinations and write a report about what they have learned.

Objectives
• Students will research geographical principles and learn how they relate to various areas of the country.
• Students will use writing skills and research to prepare a report on the characteristics of the chosen area.

Work-Based Skills
• KSAs: GED basic skills of reading and writing; Following instructions; Cooperating with others (if working in teams.)
• SCANS: Reading—locates, understands, and interprets written information; Thinking skills, problem solving, reasoning.
• EFF: Convey ideas in writing; Research.

Background
Information on geographical principles such as location, climate, physical features, etc. should be presented in advance.

How to Prepare
The instructor should gather resources such as travel brochures, encyclopedias, and other related resources. A study guide should be available to each student. Suggested study guide questions:
1. What is your travel destination?
2. Between which lines of latitude and longitude can it be found? Will you go by car, plane, or boat? Why?
3. What continent will you be on when you get there?
4. What will you see there? Are there rivers, lakes, or mountains? Is there an ocean nearby? What kinds of landforms will you see? Are there forests, farms, historical sites, monuments, national or state parks?
7. Do you need a passport?
8. How are the people the same or different from you? Do they have any unusual customs?
10. What do you think you will like best about your trip?
11. What do you think you will like the least?
12. What else can you tell me about your destination?

Active Learning Methods Used
Writing, Reading, Discussion, Researching

What to Do During the Activity
• Introduction: Review by discussing previously learned geographical concepts.

Type
This activity can be used as a stand-alone single activity or as part of a series. To extend the activity, students may continue to choose destinations in different regions.

Learners
This activity would benefit most learners of a variety of levels. Non-readers may be grouped with others in a peer-tutoring situation.

Time Frame
This activity may be completed in one session or expanded into a study unit.

Room Set-up
Table and chairs appropriate for research activities. Travel posters may be added to increase project motivation.

Media equipment
Computers and internet access optional.

Materials
Travel brochures, encyclopedias, study guides, pencils, paper.
• **Step 1:** Have students choose a travel destination from travel brochures.

• **Step 2:** Students will research their destination and complete study guide.

• **Step 3:** Using the information gathered and their completed study guides, the student will prepare a report on their travel destination including as much geographical information as possible.

**Pre/Post Assessment**
A review of previously learned concepts will serve as a pre-assessment. The student’s research and report will serve as a post-assessment.

**Evaluation by Learners**
The learners will write a paragraph at the conclusion of the activity on what they learned through the activity and offer suggestions for improvement.

**Reinforcement/Generalizations**
The students may make some generalizations about similar geographical areas to the area studied. Students may use research skills in the workplace to report on work-related topics.

**Comment**
This session worked well to motivate students to research and learn geographical concepts.
American History Timeline

As a group/class project, students construct a 28’ timeline to review a period of American history from 1492 to 1865. Workplace skills are used to develop this activity.

Objectives
• Students will demonstrate their understanding of the important events in a period of American history.
• Students will use workplace skills to plan and execute a group class project.

Work-Based Skills
• KSAs: Cooperate with others; Work on a team effectively; Follow instructions; Organize work.
• SCANS: Seeing things in the mind’s eye-organizes, and processes symbols, pictures, graphs, and other information; Participates as member of team-contributes to group effort.
• EFF: Gather, analyze and use information; Work together; Plan.

Background
The KSAs have been discussed. A study of this period of American history has been completed (my lower level students had completed a workbook that went with the text.)

How to Prepare
Lead class discussion of the project: Brainstorm all the tasks to be performed, and the decisions which must be made before the project is begun (division of tasks, etc.)

Active Learning Methods Used
Discussion; Applied Math Skills; writing, project work.

What to Do During the Activity
1. Discuss the project, including how workplace skills will be used.
2. Divide the tasks among the participants.
3. Determine a scale for marking off the years on the timeline.
4. Mark off the years.
5. Print major American history events on the timeline lightly with a pencil.
6. Print the events on sentence strips with felt markers.
7. Glue the sentence strips to the timeline at the appropriate places.
8. Erase the pencil marks.
9. Draw a dark line from the year of each event to the appropriate sentence strip.
10. Mount the finished product in the hallway for display.
11. Discuss how we worked together, how we used workplace skills.

Type
Stand-alone activity.

Learners
This activity was done with ABE I, Level 2 students. It could be done with more advanced students. At higher levels, the instructor’s role would be decreased and materials used to simplify the project for these students would be eliminated (e.g. timelines in the history text).

Time Frame
An average of one hour per day, two or three days per week, over a period of three weeks. (Usually only two students at a time worked on the project.)

Room Set-up
A long table on one side of the room, apart from the students’ desk area, should be cleared as a work space for this project.

Materials
Bulletin board paper, scissors, yard sticks, rulers, pencils, markers, sentence
strips, history text (we used *America’s Story, Book one to 1865*. Steck-Vaughn Co., PO Box 26015, Austin, TX 78755)

**Pre/Post Assessment**

**Pre-Assessment** of group processes consists of noting how the group cooperated on a previous group project. For a **post-assessment**, the instructor will make observations about the level of cooperation and teamwork during this project as compared with previous group projects. The completed timeline serves as a post-assessment of the students’ understanding of the historical events of the period.

**Evaluation by Learners**

The learners will have done an informal assessment as they discussed how they worked together and how they used workplace skills. They will also do a writing assignment in which they individually write about what they learned and how they will use it outside the classroom.

**Reinforcement/Generalizations**

The skills they have used will be noted and affirmed by the instructor as the project is in progress and in the evaluation discussion. They will be noted in future group projects and in real life situations which may be discussed informally with students, either in the class or in informal counseling.

**Comment**

This project might be more useful with a group on a higher level. However, my Level 2 students were really engaged in it. The instructor’s role was greater with this group than it would be with more advanced groups.
Shop and Serve

Learners take turns acting as the customers and cashiers in a small local grocery store. This activity allows the learner to use basic mathematics skills to solve problems in the workplace and interpret data from a chart. This activity also allows the learner to build good work ethics skills and use good communication skills.

Objectives
Learners will apply multi-step problem solving skills such as addition, subtraction, and multiplication in a real-life workplace setting while displaying good work ethics and communication skills.

Work-Based Skills
- **KSAs:** Get along with others; Talk respectfully; Cooperate with others; Follow instructions; Listen for understanding; Follow standard procedures; Accurately perform work; GED (reading and numeracy).
- **SCANS:** Serves clients/customers—works to satisfy customers’ expectations; Basic skills—reading, math).
- **EFF:** Cooperate with others; Use mathematical concepts and techniques to solve problems; Listen actively; Speak so others can understand.

Background
This problem solving activity can be used as an application after reviewing basic mathematics skills and discussing KSAs. This activity requires prior training on the use of basic calculator functions of addition, subtraction, and multiplication. It also requires that the learners know how to give correct change.

How to Prepare
Collect several inexpensive grocery items (may use empty packages). Place prices on the items prior to this assignment. Make sure items are priced well under $5.00 so shoppers may choose at least 5 items. (See “Room Set-up.”)

Active Learning Methods Used
All learners are actively participating as shoppers and/or cashiers in this activity. Learners are actively participating in the pre/post assessment by asking questions and sharing during the discussions.

What to Do During the Activity
As a prerequisite, assign a group of learners monetary amounts between $0.10 and $30.00 and have them calculate the tax on each individual amount in sequential order. Consolidate all the calculations into a tax table (chart) and copy for distribution to the learners who will be cashiers.

**Situation:** The learner is a newly hired cashier at a small local grocery store where the storeowner uses a calculator instead of a cash register. The storeowner has prepared a chart listing the tax on individual amounts.

1. Assign learners to work as cashiers and the other learners will be shoppers.
2. Explain the background of this assignment to the entire class.

**Type**
Stand-alone activity.

**Learners**
Appropriate and useful for any learner who is entering the workforce.

**Time Frame**
Time may vary based on the number of customers you have shopping and/or working as cashiers. You will probably want to break this activity into two days to allow all customers the opportunity to be a shopper as well as a cashier.

**Room Set-up**
Set up a long table with calculators and play money near a wall. Cashiers will stand on the side near the wall and shoppers will stand on the other side. Place another table near by with the grocery items in an orderly arrangement.

**Materials**
Have available the following items: calculators, tax charts. 
3. Give all the shoppers some play money.

4. Then ask the cashiers to take their places behind the table and give them a tax chart. Since the students will have done the tax calculations prior to this assignment, the chart should be easy to understand.

5. Ask the cashiers to be friendly and courteous to the shoppers.

6. Ask shoppers to choose up to five items, then take them to a cashier at the table for a total. Cashiers will add up the totals and find the amount of taxes on the chart. Cashiers will add up the taxes to the totals, accept the shoppers’ money and give the shopper correct change.

7. Ask shoppers to return to their seats and verify their correct change based on items purchased.

**Pre/Post Assessment**
Learners should already have been introduced to KSAs. When all the shoppers are finished shopping, have the cashiers and shoppers return to their seats. Discuss the assignment with the entire class. Discussion should reveal whether each learner used basic addition and subtraction skills by giving as well as receiving change. It should also reveal whether or not learners can interpret data from a simple chart, use good work ethics, and relate well to others in a work-based setting.

**Evaluation by Learners**
Learners are asked daily to identify work-based skills they have used during the day whether they are positive skills or skills that need to be upgraded.

**Reinforcement/Generalizations**
Since students identify areas of strengths or weaknesses in the work-based skills they are developing, this assignment will serve as a platform for this daily discussion. This assignment can also serve as a tool for discovering areas where there is a need of re-teaching skills such as changing money, interpreting data, and simple addition and subtraction.

**Comment**
My learners seem to really enjoy moving around and they like doing mathematics any time of the day. This would be a good activity to start off the day or to pep them up after lunch.
Designing and Arranging a Room on Graph Paper

This activity was developed to encourage students to take an active part in decorating our new building. Students were taught the formulas for area and perimeter and then measured the classroom and furniture that would be moved into the classroom. Each student made a scale model of the room on graph paper using 1 square for 1’. The students then made scale furniture out of colored construction paper using a color key to label the different kinds of furniture, and placed the “furniture” in their room according to how they thought it should look.

Objectives
Students will create scale models of a classroom and furniture and arrange the “furniture” in the “classroom” according to how they think it will look and work best.

Work-Based Skills
• KSAs: Listen for understanding; Follow instructions; Accurately perform work operations; GED math skills for proportion, ratio, area, perimeter.
• SCANS: Seeing things in the mind’s eye—organizes and processes symbols, pictures, graphs, objects, and other information; Math; Acquires and uses information.
• EFF: Gather, analyze and use information; Work within the big picture; Plan; Learn in new ways.

Background
Students need to have knowledge of the formulas for area and perimeter.

How to Prepare
Supply students with colored construction paper, graph paper and tape measures. A large work table would be helpful.

Active Learning Methods Used
Students create the scale models and arrange the furniture according to their desires.

What to Do During the Activity
1. Review with students the formulas for area and perimeter.
2. Display the measurements of the new classroom. Discuss ratio and proportion in relationship to the measurements.
3. Have students construct a proportional “room” with the graph paper.
4. Have students use the same ratio for actual to model as they construct “furniture” with the construction paper in proportion to the “room.” Be sure they use a color key for the furniture.

Remind students that the arrangement of the furniture is their choice and we will see which student’s design works the best.
Pre/Post Assessment
Students’ designs on graph paper. Post-assessment could also be actually trying the designs out in the room.

Evaluation by Learners
Students write in their log weekly and also fill out a lesson evaluation sheet.

Reinforcement/Generalizations
This project should give students a real-life working knowledge and insight into skills needed to complete a project such as this.

Comment
The students were very excited about this project and cooperated fully with each other and the instructor. What we learned when we actually tried the furniture arrangements out in our new room was that none of the designs worked! It is a lot harder to visualize how furniture will fit in a room than we thought!
Fractional Pizza

In teams, students “become” employees at Pizza Hut. It is their job to slice the pizzas into equal portions. They learned to manipulate fractions in this real life activity.

Objectives
• Students will demonstrate improvement in problem solving skills in real life situation.
• Students will demonstrate proficiency in fractions.

Work-Based Skills
• KSAs: Accurately perform work operations; GED skills of numeration; Standard procedures; Dependability.
• SCANS: Acquires and evaluates information; Organizes and maintains information; Arithmetic/mathematics; Monitors and corrects performance; Problem solving; Reasoning.
• EFF: Learn in new ways; Manage resources; Gather, analyze and use information; Use mathematical concepts for problem solving.

Background
This activity is the culmination of our study of fractions employing all the skills and procedures learned over the course of study. Because of the visual hands-on aspect of this activity, it is beneficial to all students, especially those who are tactile learners. Since this is pulled from life experiences or potential life experiences, students can easily identify with it.

How to Prepare
If you don’t have the “Pizza Hut” kit, you can construct your own by making several pizzas out of poster board or construction paper and dividing them into 1/2, 1/3, 1/4, 1/6, 1/8, and 1/12. These can be used just as easily by you or the students. Students might also be allowed to make smaller versions of their own that they can manipulate at their desks.

Active Learning Methods Used
The students exercised tactile abilities as they made their own pizzas in this activity. Since eating pizza is definitely “in their current life experiences” they were naturally motivated.

What to Do During the Activity
1. Students were given materials to construct a pizza to be used in learning session.
2. Students were given the scenario: You are an employee at Pizza Hut. Your job is to slice pizzas in equal portions. They were then given different “problems” to solve with their pizzas.
3. Students were asked to determine price per slice as an extension activity.
4. Students were given several real life problems such as splitting a bill so that each person only pays 1/4 of the bill, how many pepperoni are there on average per slice if 50 were used on the whole pizza, etc.

Type
This activity is a stand-alone.

Learners
ABE Level II, others needing review of fractions.

Time Frame
This session is about 30-45 minutes long; however, if the “pizza making” takes place in this session, you must allow about an hour longer. This could easily be divided up into two sections with the pizza making in one session (whole pizzas to be divided up in the second session) and the problem solving in another session.

Room Set-up
Nothing special is needed.

Media Equipment
None is needed for this activity unless you decide to use an overhead to do the writing part.

Materials
• Pizza Hut kit (consists of a Pizza Hut box with cardboard pictures of pizza, my
set is old and I think was available from Steck-Vaughn at one time. A homemade one, as described above, in a Pizza Hut box would be just as effective. Students would enjoy one they made themselves.

- If you desire to make the pizzas, you will need construction paper and/or poster board, glue, scissors, etc.
- Any basic fraction worksheet or assignment from a GED workbook

**Learner Handouts**
Basic fraction worksheet.

5. Class was given a basic fraction worksheet to demonstrate proficiency in concepts taught.

**Pre/Post Assessment**

**Pre-Assessment:** Students were asked basic fraction questions to review earlier learning of the material.

**Post-Assessment:** The worksheet serves as the post assessment.

**Evaluation by Learners**
All students participated and thought the activity was very enjoyable. They felt more secure about their knowledge after completing this activity.

**Reinforcement/Generalizations**
Since one of my students actually does work at Pizza Hut we were able to borrow a menu to make story problems fun. The activity relates to everyday life. All students participated.

**Comment**
This activity could also be done with those “cheap” little pizzas from the frozen food section and then a class pizza party could act as a class reward. One lower level math student took an active part which she would not have been able to do with traditional worksheet methods (today was her first day).
A Scientific Study of M&Ms

Along with fun, this lesson allows students to weigh, count, calculate fractions and decimals, correlate fractions with probability, and do simple statistics and charts using M&Ms.

**Objectives**
- Students will demonstrate their comprehension of the Scientific Method
- Students will utilize real-world statistics (Mean, Median, Mode, and Probability) while recognizing the value and meaning of fractions
- Students will create and read charts
- Students will extend computer literacy to the Internet
- Students will follow instructions and work as a team

**Work-Based Skills**
- **KSAs:** Following instructions; Working accurately; Following standard procedures; Think critically.
- **SCANS:** Uses math to solve problems and organize data; Participates as member of team—contributes to group effort; Reasoning—discovers a rule or principle underlying the relationship between two or more objects and applies it when solving a problem; Applies technology to tasks.
- **EFF:** Gather, analyze and use information; Work together; Research; Solve problems; Use mathematical concepts and techniques to solve problems; Use technology; Reflect and evaluate; Learn in new ways.

**Background**
The teacher should be familiar with the scientific method, simple statistics, and graphing. Students can be taught what they need to know as they do the exercise, if necessary.

**How To Prepare**
- Use a unit to preview the statistics to be used like:
- Purchase individual bags of M&Ms for all students. Be sure to have scales and run off a worksheet for each student. Gather the rest of the materials.

**Active Learning Methods Used**
The entire activity is hands on—weighing, counting, drawing charts, and interacting with other students.

**What To Do During the Activity**
1. Introduce the Scientific Method of discovery. Point out the main sections for an experiment: Problem, Hypothesis, Materials, Procedures, Observations, Results, Conclusion, and Follow-up. Explain that scientists use this format when writing reports to tell of their experiments and findings. Tell class that a scientific report would be much more formal than this worksheet, but it would contain the same elements.

2. What’s our problem for this experiment? Highlight the statement on the worksheet: How accurate is the manufacture and packaging of M&Ms?

3. Formulate the hypotheses: How many M&Ms are in an average bag?
of M&Ms? Are all bags the same weight? How many of each color are in each bag? What are the probabilities of getting a certain color in your bag? Hypotheses are normally stated as an educated statement: There are ____ M&Ms in a _____ oz bag of M&Ms. For example: A bag of M&Ms contain 6 colors in equal ratios of 1/6 each.

4. Distribute materials using the list provided. Explain how we’ll use each item. Explain how the scale works and can be adjusted. Explain that we need the calculator to do our mathematical calculations in Step 1, 3 and 6. The cup keeps them under control while we’re working and the paper towel keeps them cleaner.

5. Lead class to complete Steps 1-3 on their own:
   1) Weigh, record, compare the weight of the bag of M&Ms.
   2) Count M&Ms. How many calories per candy based on the stated calories per bag and the number of candies in the bag?
   3) Count per color. Calculate the fractional and percentage of each color in the bag. Discuss Step 4 as another way of looking at the ratios: What is the probability of choosing a certain color from the bag? What other ways could you look at this information?

6. Discuss how a chart or graph is a visual representation of the information. Direct class to create a circle graph and a bar chart to represent the color composition of their bag of M&Ms.

7. As a class, collect the data from all the bags of M&Ms. Calculate the mean, the median, and the mode number of M&Ms in a bag. Do the same for each color group. Draw the circle graph and a bar chart on the board that represents the entire class’ information. Point out that it would be impossible to compile this information without cooperation from the group. Sharing each other’s findings is a work-related skill!

8. Direct class to write their own conclusions after explaining the information that should be in the conclusion. Share conclusions as a class.

9. Continue the follow-up by going on-line to the M&Ms website: www.m-ms.com to the Mail Room for the official word on ratio/composition of colors in a bag of M&Ms. Enjoy and discuss the results. Encourage feedback concerning the exercise.

Pre/post Assessment
Pre-Assessment: a discussion was conducted to ascertain the students’ knowledge of the scientific method, simple statistics, and graphing.
Post-Assessment: Correctly filled out worksheets, correct charts, and discussion are the forms of assessment.

Evaluation by Learners
Lots of enjoyment level as well as a visual, physical learning of averages and charts, decimals and fractions.

Reinforcement/Generalization
Helps understanding of charts and graphs, fractional parts, and statistical data.

Comment
Learners were very engaged in the learning process and enjoyed the M&Ms! I might add a unit on means, median, and mode as a pre-unit activity.
Learning the Language of Basic Math Through Team Work

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In this session, students will use teamwork to analyze what math word problems are asking and demonstrate their knowledge of math language to determine math operations required to solve word problems.

Objectives
• Students will work together as a team to solve problems.
• Students will identify the key math language words to determine the math operations needed to solve the problems.
• Students will compute math word problems involving addition, subtraction, multiplication, and division.

Active Learning Methods Used
Discussing, writing, and problem solving as a team member.

What to Do During the Activity
Display a colored construction sheet in the middle of each table (e.g., red, blue, orange).
1. Ask learners to draw a color strip (e.g., red, blue, orange) from a box to determine team assignment.
2. Learners station at the table of color chosen.
3. Request each team to elect the following members and define roles:
   • Materials/Supplies Person — retrieves and distributes supplies/handouts.
   • Recorder — Does the writing for the group, reports results.
   • Facilitator — Directs the process.
   • Team Coach — Encourages all team members to contribute to the process.
   • Celebrator — Recognizes and praises accomplishments of the group.

4. Request Materials/Supplies Person

Learners
The activity is suitable for ABE learners preparing for the GED Mathematics Test.

Time Frame
This activity typically takes approximately 60 minutes depending upon the degree of participation.

Room Set-up
Tables for teamwork.

Materials
Handouts, pencils for participants, paper.

Learner Handouts
Instructor prepared (e.g., Handout #2) attached.
to distribute Handout #1 to team members.

5. Request Facilitator of each team to discuss contents among members.

6. Request Recorder of each team to share highlights of team’s discussion.

7. Request Materials/Supplies Person to distribute Handout #2 to each team member.

8. Request Facilitators to read the directions aloud to team members and to complete Handout #2 as a team effort, with Coaches encouraging participation.

9. Request Recorders to report results of each team, with Celebrators verbally praising.

10. Direct each team to develop the activity by writing original math word problems, using varying operations of addition, subtraction, multiplication, and division.

11. Following the same directions, circle key math language words, determine math operations, and compute the problems.

For variety, circulate productions among other teams.

**Pre/Post Assessment**

**Pre-Assessment:** Before initiating the activity, learners are asked to share any previous knowledge of math language that cues the learner to the operations needed to compute word problems.

**Post-Assessment:** After the session, learners discuss the effectiveness of the activity in assisting them to compute basic math word problems.

**Evaluation by Learners**

Learners will compute word problems on an individual basis with materials provided by the instructor.

**Reinforcement/Generalizations**

By understanding and applying the language of math, learners will realize how key words cue them to operations needed to compute basic math word problems (a component of the GED examination).

**Comment**

The teaming strategy eased intimidation and math anxiety of the lower achievers. Allowing teams to create their own word problems reinforces skill application. The students enjoyed working together as a team.
Work Place Geometry

Working in teams, students cement their understanding of perimeter and area by figuring the replacement cost of baseboards and floor tiles for the classroom.

Objectives
Students cooperate and communicate with team members to solve a problem. Students apply their understanding of perimeter and area to the classroom.

Work-Based Skills
- **KSAs:** Work on a team effectively; Accurately perform work operations; Listen for understanding; Follow instructions; GED—math.
- **SCANS:** Math—performs basic computations; Participates as member of team—contributes to group effort.
- **EFF:** Gather, analyze and use information; Work together; Cooperate with others.

Background
This activity does require background lessons based on definitions of perimeter and area as well as previous knowledge of using measurement tools such as rulers and tape measuring devices. Students should have background knowledge of fractions.

What to Do During the Activity
1. The students are divided into two groups. One group has the responsibility to find the perimeter of the baseboards in the classroom. The boards are to be replaced. They are then to figure up the cost of replacement. They are given unit cost to replace.

2. The second group of students is told to find the area of the classroom in order to replace existing tile. They also are given unit cost to replace the tile.

Pre/Post Assessment
Students will choose a representative of their group to explain how they reached their answer. Answer will be checked by teacher. If the answer is wrong, the activity will be repeated with the instructor to help the students reach the correct solution to the problem. This same process will be taken with the second group of learners.

Evaluation by Learners
After the exercise is completed, students are asked to write about what they enjoyed about the activity, what they didn’t enjoy, and how this activity could be used in their daily life.

Reinforcement/Generalizations
The discussion on workplace issues
should give the students insight on how this applied skill can be used in the workplace. The importance of good teamwork, communication skills, following directions and accuracy of work should impact upon the students.

Comment
This really worked well in my classroom. It generated a lot of energy, communication, problem-solving techniques, and interest.
Area, Perimeters, and Cost Factors

Working in teams, students design a one-bedroom apartment layout using graph paper and the Word Perfect 6.0 Graphic Design tool. Using cost factor sheets and cost-per-square-foot estimates from local builders, they estimate the cost per apartment for their designs. As a class, students then make a real-size layout of two of the rooms of one group’s apartment layout on the floor of the classroom using yard sticks and masking tape.

Objectives
- Students will be able to demonstrate the use of measuring tools to aid in determining the area and perimeter of a single bedroom apartment.
- Students will be able to demonstrate how to get one’s cost factor from the measurement of the one bedroom apartment.

Work-Based Skills
- KSAs: Listen for understanding; Follow instructions; Work on a team effectively; Accurately perform work operations.
- SCANS: Performs basic math computations; Sees things in the mind’s eye—organizes and processes symbols, pictures, graphs, objects, and other information; Acquires and uses information; Uses computers to process information.
- EFF: Gather, analyze and use information; Work within the big picture; Work together; Cooperate with others; Plan; Use technology.

Background
The instructor must know how to use Word Perfect 6.0 Graphic Design tool. Drafting skills and knowledge of building codes would be helpful. The students must be able to add, subtract, multiply, and divide. They must be able to use a ruler and follow directions and have some basic computer skills.

How to Prepare
The basics concerning area and perimeters should be reviewed with the students. The instructor should gather the needed materials.

Active Learning Methods Used
Team work, project work, drafting, computer design, laying out room design on classroom floor.

What to Do During the Activity
Students will work in different groups organizing their work as they go. A different work station will be set up in the classroom each day. Student teams will rotate through each station:
- Day/Area 1—Using graph paper and rulers, students create an apartment floor plan that must have a bedroom, living area, dining area, kitchen, bathroom, hall closet, washer/dryer area, bedroom closet, and a coat closet.
- Day/Area 2—Students use Word Perfect 6.0 graphic design tool to create the layout for their apartment. By utilizing the graphic layout and the different graphic tools, they are able to pull together a computer-generated layout.

Type
This activity can be used as the culmination of lessons on measurement.

Learners
Appropriate for all learners. The learners will work together in small groups to aid the weaker math students.

Time Frame
Anywhere from 3 to 5 days depending on size of class and capability of students.

Room Set-up
- Day 1: Students work in-groups in the classroom.
- Day 2: Students work on computers.
- Day 3: Clear classroom floor for layout of two rooms.
- Day 4: Work in groups on figuring.

Media Equipment
Computer with Word Perfect 6.0 Graphic Design tool.
Materials
Graph paper, rulers, newspaper ads, masking tape, tape measuring devices, yardsticks, calculators, contracting material cost factor sheets

(Cost factor sheets can be obtained from any store that sells building supplies such as Lowe’s, Home Depot, etc. These sheets state the current cost of building supplies.

Also, I suggest that teachers call a local contractor or two to get estimates of the current building cost per square-foot in their area. This will aid in estimating total area cost.)

Learner Handouts
Cost factor sheets and contractors’ estimates of the current building cost per-square-foot.

• Day/Area 3—Students work together as a whole class to use the classroom floor, yardsticks, and masking tape to lay out one apartment bedroom and bathroom setups, making changes as needed.

• Day/Area 4—Students will work in groups to figure the cost of building one sample of a one-bedroom apartment. Cost factor sheets and contractors’ estimates of the current building cost per-square-foot will be provided.

Pre/Post Assessment
Pre-Assessment: Student/teacher discussion of math basics concerning areas and perimeters.
Post-Assessment: The completed floor plan and the cost factor for constructing a one-bedroom apartment.

Evaluation by Learners
By assessing the interest within the classroom and the end result of each activity, the instructor will be able to evaluate the success of the lesson.

Reinforcement/Generalizations
This project reinforces teamwork, problem solving, computer skills, communication, assessment, and budgeting.

Comment
Students always enjoy a group activity and were interested in how buildings are measured and constructed.
Two-Week Imaginary Vacation

Students (in two-person teams) plan and then pretend to actually go on a two week vacation with their children, writing each day’s experiences and expenses in a journal. The unit includes math, science, social studies, literature (or reading) and writing as well as parenting, citizenship and work components.

Objectives
Students will cooperate with a partner to choose a destination, plan an itinerary, predict and compute expenses, journal their imagined experiences, and reflect on their project.

Work-Based Skills:
- **KSAs:** Working as a team; Following instructions; Dependability (team must be there every day to work together); Listening for understanding; Cooperating with others; Getting along with others; Talking with respect; Doing the right thing.
- **SCANS:** Identifies, organizes, plans, and allocates resources; Prepares budgets, keeps records, and makes adjustments to meet objectives; Locates, understands, and interprets written information in prose and in documents such as manuals, graphs, and schedules; Communicates thoughts, ideas, information, and messages in writing.
- **EFF:** Gather, analyze and use information; Manage resources; Work together; Plan.

Background
Traveling partners have been paired (teacher tries to put lower level with higher level) and partners have decided prior to the first day of this unit on the location to which they want to travel. They have called or written for state tourist information a month or two in advance. This was a pre-lesson on how to use the telephone to obtain information. There were 1-800 telephone numbers for the state tourist offices.

**How to Prepare**
An information sheet for each team should be prepared in advance. Information on the sheet is:
- miles per gallon assumed for their car
- the price per gallon of gas
- the borders of where they may travel
- how much gas their tank will hold
- how much money each team member has saved a month over a 12-month period for this vacation

**Active Learning Methods Used**
Journaling, partner activities, daily used math problems, keeping a budget.

**What to Do During the Activity**
Students will be given certain constants: miles per gallon, price of gas, borders of where they may travel, how much gas tank will hold, and how much money each team member has saved a month over a 12-month period (starting balance). They must keep a daily running balance.
- **Day 1:** Introduce project and hand out materials, pick vacation objective, and introduce constants on information sheet. Help teams

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Nashville READ
(Davidson County)
become familiar with maps, mileage, gas consumption, states they will be traveling through to get to their chosen vacation spot, budgets, researching biomes of states they visit, researching historical sites they may visit, and how they will journal every day to relate all of these facts. Teacher will accomplish this by lecture discussion, modeling of map skills and encyclopedia skills for gathering information.

- **Days 2-9:** Students figure out where they will be and what they will see on each day of their journey. Teacher should monitor and adjust, answer questions, etc. Students keep a journal of their imagined day’s experiences including expenses, miles traveled, sites seen, stops made, beginning and ending location, and lodging.

- **Day 10:** Final journal entry concerning getting home, wind-down time, etc. Any final reflection of trip. A final summing up of opinions of the project as a whole.

**Pre/Post Assessment**
Listening to individual teams as they plan where they will visit and call for information will give the teacher a pre-assessment of the facility of their trip-planning capabilities. By reading the journal entries the instructor should be able to see that partners have shared the work and all aspects of plan were completed.

**Evaluation by Learners**
Students are asked to write a summary discussing their opinions of the project. Did they enjoy it? What did they learn?

**Reinforcement/Generalizations**
Students came to the understanding that vacations and trips are not out of their reach. They also improved map skills, parenting, and other vital life skill areas.

**Comment**
Be prepared for the first couple of entries to be rather stiff, but as they loosen up students start using their creativity and feel they really are experiencing this trip.
Read, Write, and Discuss to Reinforce KSA Skills

This is a whole class activity in which students read and analyze a newspaper commentary on an issue of current significance. Then they write letters to the editor about the issue raised.

**Objectives**
Students will read, analyze, and paraphrase a newspaper commentary. Using teamwork, they will reflect on the article as a group and discuss it. They will organize their thoughts and write a response.

**Work-Based Skills**
- **KSAs:** Cooperate with others; Work on a team effectively; Follow instructions; Accurately perform work. Students use the KSAs mentioned above as they read, consider, reflect, discuss, analyze, and write about the content of the news commentary. They consider how the ability to organize their thoughts, attend carefully to details, and express themselves clearly in speaking and writing are valuable assets in the workplace.
- **SCANS:** Participates as member of team—contributes to group effort; Exercises leadership—communicates ideas to justify position; Responsibly challenges existing procedures and policies.
- **EFF:** Read critically, cooperate with others; Convey ideas in writing; Exercise rights and responsibilities.

**Background**
Instructor should be familiar with the issue and the background of the issue in the community that is raised in the newspaper article. Class is familiar with KSAs.

**How to Prepare**
Have copies of newspaper article ready for students. Choose and list vocabulary words for dictionary skills.

**Active Learning Methods Used**
Group discussion, brainstorming, teamwork, writing/composing.

**What to Do During the Activity**
1. Present general news issue to the class. Students share a few ideas about their awareness of the topic. Next, they read the article silently, then aloud. Vocabulary words are highlighted, and students use dictionaries to note meanings in context and pronunciations.
2. Check their comprehension of these words by reading and explaining the sentences from the article.
3. Students discuss the article to identify “who, what, where, when” facts and to distinguish factual statements from statements of opinion.
4. Students should demonstrate ability to participate in a discussion appropriately, speaking with respect for others’ ideas, listening for understanding, and cooperating together.
5. After everyone has had a chance to express his/her views, students will
write letters to the editor about this issue, or another current news issue of concern to them.

**Pre/Post Assessment**
Discussion before and after the lesson about how the importance of sharing ideas and working with others in a constructive way can be valid in the classroom, home, neighborhood, and workplace.

**Evaluation by Learners**
Discussion provides an opportunity for students to describe the ways their experiences during this activity might or might not be useful in activities outside the classroom.

**Reinforcement/Generalizations**
Students should feel that their opinions on issues are worth sharing, and that they can contribute to a larger group—a class, a working group, and/or a community. KSAs are closely related to EFF skills, and are equally valid when viewed as skills for family and community members as well as workers.

**Comment**
We chose as a topic the shootings at Columbine High School in Littleton, Colorado. There were lots of editorial pieces to choose from and my students expressed their opinions readily when we discussed it in class. Writing letters to the editor on a topic about which they had strong feelings was a good way to get across the idea that “what you write is what you said.” Students are somewhat more willing to revise and edit when they know they are going to actually send in their writing to someone and that it might actually be printed in the paper.

It was a good idea to use a topic that had some long-term interest because some students took quite a long time to revise and rewrite, and the topic was still on the minds of people even weeks after it was first news. One of my students took it upon herself to try to use the vocabulary words that we learned from this reading in her letter. That was a good extension of the lesson. Another extension we used was comparing the columnists’ writings on the story and the news reporting of the story to observe how different purposes for writing result in different writing styles. We actually read several different columnists’ writings about the shootings and noted different writing styles there too.

An added bonus was that several of the columnists’ pictures were with their columns, and students could pick out the ethnic backgrounds of the columnists. When they knew the columnist had the same ethnic background as they did, the columnist then became a role model for them.
Science: The Effects of Salt Water on Steel or How to Prevent Rust

Students brainstorm about what solutions they think might help prevent steel from rusting. On the following day, students do an experiment to test the solutions. In groups of three, students decide which two solutions they want to dip a steel wool pad (non-soap) into, and then spray the dipped pad with a salt water solution. Students observe and notate what happens for one week.

Objectives
Students formulate hypotheses, conduct experiments, observe results, and draw conclusions. They will work cooperatively in groups.

Work-Based Skills
• **KSAs**: Working on team effectively; Cooperating with others; Talking with respect; Following instructions; and Accurately performing work.
• **SCANS**: Organizes and maintains information; Participates as member of team—contributes to group effort.
• **EFF**: Gather, analyze and use information; Work together; Research.

Background
We had been talking about the Titanic and the little robot-like vessel that was used to investigate the wreckage. In the discussion it was brought to their attention that a problem the scientists had experienced with this vessel was that it rusted rapidly when in the salt water for long periods of time. Scientists were trying to find a way to prevent this. This lesson explores the students’ interest.

How to Prepare
The instructor gathers the materials needed to do the experiment after the students have decided on the first day what solutions they want to try.

Objectives
Students formulate hypotheses, conduct experiments, observe results, and draw conclusions. They will work cooperatively in groups.

Active Learning Methods Used
Brainstorming, teaming, hands-on production, writing down observations rest of week (one person).

What to Do During the Activity
This is done with the brainstorming of solutions one day (so teacher has an idea of what things to bring for the experiment) and actually doing the experiment the next day with a week for observation of steel wool pads, checking for rust (or no rust).

1. The day before the experiment, students brainstorm ideas of solutions which might prevent steel from rusting.

2. The teacher brings the solutions for use the next day along with bowls, (a fork, depending on solutions), and a spray bottle of salt-water solution.

3. Write the solutions that the students are to choose from on the board. Students are divided into cooperative groups of 3-4 students.

4. Students, in their groups, decide on two solutions to try.

5. The teacher will pour into the bowls a certain amount of each solution (excluding paint—we used spray paint) and as each

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Type
This is a stand-alone single activity that is carried out over the course of a week.

Learners
Suitable for all students.

Time Frame
About 15 minutes the first day for brainstorming; 1 hour for the experiment; a few minutes each day for a week to observe what is happening and to take notes.

Room Set-up
Students do it at their tables; they can move them around for grouping.

Materials
Steel wool pads—enough for each group to have two. Solutions they have chosen (my class chose cooking oil, bleach, paint, vinegar, and comet cleanser), bowls to put the solutions in, a bottle of salt-water solution (make it REALLY salty, like the ocean), paper towels to set the steel wool pads on and for clean up.
group decides on the solutions they want to use, they will come and get it and take it back to their table.

6. They will take the steel wool pads and dip one into each solution they chose.

7. After the steel wool pad dries, students saturate them with salt-water solution and set both aside on a piece of paper towel labeled as to the solution used and the group doing the experiment.

8. The pad plus towel are placed on a shelf to observe for a week.

9. Students will then decide on a note taker to notate on a daily basis for one week observations of the pads rusting (or not rusting), any surprises from how they thought results would be, etc.

10. Students will have to share the salt-water spray and solution bowls, if several choose same solutions. (They can learn patience this way and consideration).

11. At the end of a week, groups meet to write up a short report on their results from the notes taken on their experiment.

**Pre/Post Assessment**

Note group dynamics for cooperation. At the beginning of class each day check with groups about their observations and make sure their note-taker is writing observations down for the group. Use the report at the end as an assessment.

**Evaluation by Learners**

Their observations of the steel wool pads and written daily notes.

**Reinforcement/Generalizations**

The KSAs in this experiment/science lesson are reinforced on Friday with group activities pertaining specifically to work skills.

**Comment**

This science lesson was good for the class because a lot of them hate doing the more serious and sometimes boring (to them) group activities we do on Friday for their work skills time. In doing this experiment as a group activity, they got to see that groups can be fun to work in sometimes. It also gave them the opportunity to work together on decision-making and getting along with others cooperatively in a group.

Students also learned something about scientific experiments being done according to certain procedures, etc. They had to do it in specific order and follow instructions in order to do that. The biggest plus for my students and for me was that we learned science can also be fun! It was a way for me to enjoy teaching a science skill—hypotheses, test, observation, etc. Not just the same old same old, “write on board, students take notes” type of lesson.
News You Can Use

This lesson encourages students to be involved in what is happening in their community and to speak out on the issues. Students read articles in the newspapers and write letters to the editors. They discuss how they can become involved in current, local issues.

Objectives
Students become aware of community issues, read the newspaper for information, write a letter requesting action, and learn how to follow up on an issue.

Work-Based Skills
- **KSAs:** Listen for understanding; Talk respectfully.
- **SCANS:** Communicates thoughts, ideas, messages in writing; Thinks creatively, makes decisions; Understands systems—knows how social, organizational, and technological systems work and operates effectively with them.
- **EFFs:** Gathers, analyzes and uses information; Work within the big picture; Exercise rights and responsibilities; Read critically; Convey ideas in writing; Advocate and influence.

Background
Our clients are part of a group that feel they have no voice—having things done to them rather than doing what they want done. They learn to use the newspaper to be involved in the community and use their voice through understanding an issue, speaking out on an issue, and taking action concerning it.

How to Prepare
Read through the local newspaper for an issue that would affect/interest students. Possibly do research about history of the issue. Consider inviting a local government official to visit and discuss the issue.

Active Learning Methods Used
- Reading and responding
- Discussing
- Writing a letter to editor
- Following the story for several days/weeks

What To Do During the Activity
This activity can be done with any local issue using the local newspaper. What follows is specific to the issue we dealt with.

Day 1:
1. Read an article from The Tullahoma News and Guardian concerning the closing of the CD Stamps Community Center. Answer the following questions as you read:
   - What’s the problem?
   - What are the city’s reasons for the action?
   - When can citizens voice their opinion?
   - What reasons would you give for NOT taking this action?
   - What would you propose doing with this property?
2. Discuss the questions and the ramifications of the proposed actions.
Direct students to write a letter to the editor, the mayor, or the superintendent of schools.

Day 2:
3. Read the article concerning citizen reaction to the closing and the defense fund that has been started to save the building as well as the letter to the editor.
   • What new information do you see in the article?
   • Do you think this is an appropriate action?
   • Do you agree with the opinions expressed?

Day 3: (and additional days while the issue is in the news)
4. Read follow-up articles concerning the building and the relocation of Head Start as a result. Continue to encourage writing to appropriate persons about concerns.

Pre/Post Assessment
Pre-Assessment: Discussion of the voice the students feel they have in community affairs.
Post-Assessment: Completed letter to the editor on Day 1. Reading skills each day. Discussion of the issue.

Evaluation by Learners
My students became very involved in this issue since it affected Head Start. One of my students even received a letter from the mayor expressing appreciation for her concern.

Reinforcement/Generalization
This lesson transfers into the learners’ lives by strengthening their ability to analyze issues and express their opinions. In addition, it helps their self-esteem by giving them a voice. Employers need employees that are able to understand and assess issues and speak out about resolutions of problems.

Comment
This lesson was a winner with my students because it addressed something that hit close to home.
Essay Writing Using Business Letters

Once a week, students write and send letters on issues they are interested in or concerned about to the person who would be concerned with that issue. (It could be a letter to the editor or to some authority figure.) Letters are word-processed.

Objectives
Students will strengthen their writing skills by regularly writing letters on issues of importance to them to express themselves in a business letter format. Students will learn word-processing skills.

Work-Based Skills
- **KSAs:** Accurately perform work operations; GED (writing).
- **SCANS:** Writing—communicates thoughts, ideas, information, and messages in writing; Creative thinking—generates new ideas; Interprets and communicates information; Uses computers to process information.
- **EFF:** Gather, analyze and use information; Develop and express sense of self; Convey ideas in writing; Advocate and influence; Reflect and evaluate.

Background
Class discussion of issues in the community or students’ lives will give class and teachers some ideas on writing topic.

How to Prepare
Instructor needs to show students a proper business letter format.

Active Learning Methods Used
Discussion, writing, word processing.

What to do During the Activity
1. After topics are found, brainstorming can be done as a group. (I have found it better for each student to have her own idea so each letter will be more original. Letters tend to be the same otherwise.)

   Editing each other’s work has worked well with some groups, and not so well with others.

2. Most business letter essays can be done in three paragraphs. One example, which the students seem to particularly enjoy, is a business letter to ABE supervisor with a copy to DHS area manager.

3. The three-paragraph format is as follows:
   1. Tell a little about yourself.
   2. What have you especially enjoyed about being in the program.
   3. What would you change about the program, if possible.

   A copy of each letter is kept in a special folder. Discussion is always good afterwards.

Pre/Post Assessment
In most cases, improvement in writing skills and expression of feelings can be seen from one letter to the next.

Type
This is a stand-alone lesson which is repeated regularly. This activity seems to work best for our program if it is done no more than weekly. It can be done as issues arise. For example, issues in the community will lend themselves to topics for these letters.

Learners
This activity is suitable for all learners. However, lower levels may need a peer tutor to act as a scribe.

Time Frame
This depends greatly on the students. Some students may finish writing, editing, and typing in one day. Others may work on the project for several days.

Room Set-up
This activity can be done at students’ desks and at the computer.

Materials
Students are able to find...
issues that concern them in the daily paper.

Learner Handouts
A copy of a business letter format.

Evaluation by Learners
Students take great pride in their “creations.” Their comfort level in writing also improves and most state that they have less fear of the GED essay. This evaluation can be done by discussion.

Reinforcement/Generalizations
On occasion, students’ suggestions have been implemented, and this has been a great reinforcer to them. For example, one student suggested that we needed a larger chalkboard. Our supervisor did purchase this for us. Not only does writing seem to improve but editing their own work improves, which is needed for the GED (writing skills part I).

Comment
See “Reinforcement/Generalizations” section.