

# **TIES** 2006

**Teachers in Industry for Educational Support**

**Xerox**

**Directions? Who Needs Directions?**

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## **Directions? Who Needs Directions?**

### **Curriculum Unit Overview**

#### **Summary**

This curriculum is designed to provide students and industries with the skills and understanding of how important it is to provide clear and accurate information, when giving directions. We have found that there are various ways to provide “How to...” information, but that information is not always clear to the general public. In some instances, information is best when short and concise, and in others more details may be necessary in order to achieve understanding. This curriculum can be used for students in the intermediate through high school grade level. However, the hands on activities and the math and English skills should be adapted accordingly. For example, designing web-sites, spread sheets, and Power Point presentations for “How to...” projects, and disassembling and reassembling car parts or office chairs for the science lesson. The instructor should allow approximately forty-five minutes per lesson.

#### **Big Picture**

The hook activity will be a thirty-minute lesson that will allow each student to participate in drawing a picture. The teacher will give one student a picture. The student will verbally give directions to the remaining students on what and how to draw the picture. At the conclusion of the activity, the students will compare drawings. The activity will demonstrate to the students the importance of conveying clear and concise information.

#### **Preparation for the Unit**

The academic instructors will discuss beforehand all materials and equipment necessary for the lessons. The home economics teacher will need to be notified as to the use of the oven for baking purposes. The culminating activity will be raffled off. Information pertaining to the raffle needs to be established.

#### **Overview**

The following page is a table that summarizes the lessons for the curriculum unit. The unit includes the academic areas of language arts, science, and math. The unit includes brief summaries of each of the competencies that must be taught before students approach the culminating activity. “Authentic Learning Tasks” (ALTs), meaning that the competencies should be taught in as realistic a way as possible to reflect the application of the skills in a real life, or workplace context.

## Curriculum Unit Summary

### Xerox

#### Directions? Who needs Directions?

Section Title Language Arts	Section Title Science	Section Title Math
<p><b>ALT 1 – Brainstorming</b> The instructor will guide the students through a brainstorming activity. The students will use a graphic organizer to organize information.</p>	<p><b>ALT 1 - Disassembly</b> The students will be placed in groups of four. They will disassemble the object that the group is given. One student will record the process.</p>	<p><b>ALT 1 – Reading Directions</b> The students will be placed in groups of four. Each group will be given one of three recipes. They will read the directions and gather the appropriate materials needed to make the recipe.</p>
<p><b>ALT 2 – “How to…”</b> The students will design an outline, giving directions on how to make or assemble their project.</p>	<p><b>ALT 2 – Re-assembly</b> The students will reassemble the object using the directions written by the recorder.</p>	<p><b>ALT 2 – Following Directions</b> The students will follow their recipe’s directions.</p>
<p><b>ALT 3 – Presentation</b> The students will present their “How to…” projects.</p>	<p><b>ALT 3 – Directions? Why?</b> The students will write a half page report on why good directions are important.</p>	<p><b>ALT 3 – Bon Appetite!</b> The students will write a half page report on why it is important to follow directions exactly. Students will share their final cuisine.</p>
<p style="text-align: center;"><b>Culminating Activity</b></p> <p>Students will assemble a Sauder Bookshelf unit. This will integrate math, science, and language arts.</p>		

### Section One: Language Arts

## **ALT 1: Brainstorming**

### **Summary**

The instructor will guide the students through a brainstorming activity. The students will use a graphic organizer to organize information.

### **Competencies**

- Verbally communicating ideas
- Transferring ideas to writing
- Organize information in logical sequence
- Writing skills using correct grammar, spelling, and syntax usage
- Information is clear and accurate

### **Time**

The students will complete this activity in 45 minutes.

### **Materials**

- Pencil
- Flowchart

### **Instructions**

1. The instructor will place the words “How to...” on the board.
2. The students will verbally give suggestions on how to complete the title.
3. The instructor will write down all suggestions.
4. The students will choose a topic from the brainstorming activity or chose a topic that has been approved by the instructor.
5. The students will fill in a flowchart depicting the directions on how to make or assemble the topic they have chosen.
6. The instructor will stress the importance of using clear and accurate directions when completing the steps on the flowchart.

### **Evaluation/Assessment of Student’s Competency**

The competencies will be graded using the following rubric:

- 4-Criteria met 100%
- 3-Criteria met 75%
- 2-criteria met 50%
- 1-Criteria met 25%

### **Closure**

The instructor will restate the importance of giving clear and accurate details when giving directions for the students “How to...” project. The instructor will tell the students that tomorrow they will follow-up by using their flowchart to design an outline for an oral presentation.

### **Section One: Language Arts**

## **ALT 2: “How to...”**

### **Summary**

Using the flowchart, the students will design an outline to be used during their “How to...” presentation.

### **Competencies**

- Organize information in logical sequence
- Writing skills using correct grammar, spelling, and syntax usage
- Information is clear and accurate
- Information is in proper outline format

### **Time**

The students will complete this activity in two- to- three 45 minute class sessions.

### **Materials**

- Pencil
- Paper

### **Instructions**

Using the flowchart the students will design an outline for their presentation. **(The format of the outline and the amount of time allowed for presentations will be determined by the instructor)**

1. After completing the outline, the students will make a list of the materials needed to present their “How to...” project.
2. The students will be given a list of criteria for presenting their “How to ...” project.
3. The instructor will go over the criteria with the students.
4. The students will use the remainder of class time to practice their “How to...” presentations.

### **Evaluation/Assessment of Student’s Competency**

The competencies will be graded using the following rubric:

- 4-Criteria met 100%
- 3-Criteria met 75%
- 2-criteria met 50%
- 1-Criteria met 25%

### **Closure**

At the conclusion of this ALT, the instructor will give an order of students who will present their presentations on an established date.

## **Section One: Language Arts** **ALT 3: Presentation**

## **Summary**

The students will present their “How to…” projects.

## **Competencies**

- Material was presented in a clear and well-organized manner.
- Student consistently spoke loudly and clearly.
- Student had eye contact with audience.
- Student followed outline. (i.e. intro, steps, closure)
- Presentation time was met.

## **Time**

The amount of class time will vary depending on the number of students and the amount of time allotted for the presentations.

## **Materials**

- The materials will be determined by the student and discussed with the teacher.

## **Instructions**

1. The students will be given time to set-up their presentation materials.
2. The student will present their “How to…” project.
3. The instructor will observe and evaluate the student’s presentation.
4. The student will remove all presentation materials from presentation area.

## **Evaluation/Assessment of Student’s Competency**

The competencies will be graded using the following rubric:

- 4-Criteria met 100%
- 3-Criteria met 75%
- 2-criteria met 50%
- 1-Criteria met 25%

## **Closure**

At the conclusion of this ALT, the instructor will restate the importance of clear and accurate directions. Leading into the culminating activity, the instructor will guide the students in a discussion of how directions are used in our everyday lives.

## **Section Two: Science** **ALT 1: Disassembly**

**Summary**

Students will disassemble and record the process of disassembling an object.

**Competencies**

- Students will be able to demonstrate and write a process for disassembling an object.

**Time**

Approximately 40 minutes

**Materials**

- 2 – 6” battery operated fans, 2 – battery operated staplers
- 2 – battery operated wall clocks,
- 12 small screwdrivers (6 flat and 6 Phillips)
- 6 flat table areas. **Note:** Different objects may be substituted with recommendation that they use no electricity.

**Instructions**

1. Students placed in groups of four.
2. Verbal and written directions (on board) will be gone over before beginning. What do we want to accomplish and how are we going about it?
3. Each group is given an object (a fan, stapler, or clock) and screwdrivers (2). They are to see that their object is in proper working order.
4. One person in each group is designated to be the recorder to write down the process.
5. The students will begin disassembling the object given to their group. Recorder will write down process.

**Evaluation/Assessment of Student’s Competency**

- Assess each student working in the group.
- Compare/contrast the different procedures used with same object (two different groups)
- Collect information from recorders/read information to class and see if students get a clear picture of how to disassemble each object.

**Closure**

The instructor will debrief the students. The instructor will help students in their preparation for writing about directions in their next lesson. The instructor will allow for questions and answers.

**Section Two: Science  
ALT 2: Re-assembly**

**Summary**

Students will re-assemble the object which was disassembled in the previous lesson. They will use information gathered by the recorder in the previous lesson.

**Competencies**

- Students will be able to demonstrate how to re-assemble the object they disassembled in the previous lesson.

**Time**

Approximately 40 minutes

**Materials**

- 2 – 6” battery operated fans,
- 2 – battery operated staplers, 2 – battery operated wall clocks
- 12 small screwdrivers (6 flat and 6 Phillips)
- 6 flat table areas -- Same materials located in their work station from the previous lesson.

**Instructions**

1. Students reconvene in their groups of four at their workstation in the previous lesson
2. Verbal and written directions (on board) will be gone over before beginning. What do we want to accomplish and how are we going about it?
3. Each group is to reassemble the object which they disassembled in the previous lesson. They are to use the information taken by their recorder (returned to each group by the instructor).

Once re-assembly is completed, testing the object to see that it works properly is the final procedure.

**Evaluation/Assessment of Student's Competency**

- Assess each student working in the group.
- Compare/contrast the different procedures used with same object (two different groups)
- Check final results to see that each object functions properly.

**Closure**

The instructor will debrief the students. The instructor will help students in their preparation for writing about directions in their next lesson. The instructor will allow for questions and answers.

**Section Two: Science****ALT 3: Directions? Why?**

**Summary**

Students will write about why good directions are important.

**Competencies**

- Students will apply effective writing strategies.

**Time**

Approximately 20-30 minutes

**Materials**

- Paper
- Pencil/pen.
- Rubric

**Instructions**

1. Students will be directed to write a half-page report on “Why Good Directions Are Important”.
2. Before beginning their writing assignment, students are to brainstorm some ideas on the back of their paper.
3. Go over rubric which will be used for writing assignment. Remind students to include details in their writing.

**Evaluation/Assessment of Student’s Competency**

- Collect writing assignment.
- Check to see that directions were followed regarding brainstorming – give credit
- Use rubric to evaluate their writing assignment.

**Closure**

This activity will show the teacher that the students have a good idea of why directions (especially good ones) are important. This will carry over to the next section.

**Section Three: Math  
ALT 1: Reading Directions**

**Summary**

Students will read directions from a recipe and get the appropriate utensils used in preparing the recipe.

**Competencies**

- Students will identify appropriate utensils needed in preparing the recipe.

**Time**

Approximately 20-30 minutes

**Materials**

- 2 sets of three recipes (suggest cookie recipes)
- 6 workstations
- 6 sets of measuring cups
- 6 sets of measuring (teacher's choice – 6 large mixing spoons)
- Ingredient needed for each recipe

**Instructions**

1. Teacher will choose three different recipes to use and make two copies of each one.  
Note: The two sets of each recipe are to allow for an extended activity of comparing and contrasting the end results of each group's finished recipe.
2. Students will be divided into groups of four.
3. Students are given the recipe they will use in their group.
4. They read through the recipe and go to the area designated by the teacher to pick up the utensils needed to prepare their recipe.
5. They collect their utensils and bring them back to their workstation.
6. The teacher collects the recipes from each group after having the names of each group member written on the back.

**Evaluation/Assessment of Student's Competency**

- Students will check to see that they have all the utensils and materials needed to complete their recipe.

**Closure**

The instructor will discuss the importance of good preparation and review what was accomplished in the lesson. Instructor will allow for questions and answers.

## **Section Three: Math**

### **ALT 2: Reading Directions**

**Summary**

The students will follow directions in making a recipe. The students will learn the importance of following a recipe's directions exactly.

**Competencies**

- Students will mix ingredients correctly to make a recipe.

**Time**

Approximately 30 minutes

**Materials Note:** The students already have the materials at their workstations

- 2 sets of three recipes (teacher's choice) – suggest cookie recipes without use of blenders
- 6 workstations
- 6 sets of measuring cups
- 6 sets of measuring spoons
- 12 mixing bowls (6 large and 6 small)
- 6 large mixing spoons (enough for
- Ingredients needed for each recipe
- Baking sheets (enough for each group to bake one item for each member in class)
- Oven for baking (teacher's use – not for students)

**Instructions**

1. The teacher will hand out the recipes collected from each group in the previous lesson.
2. Students will begin mixing the ingredients according to their recipe.
3. Students will let the teacher know when they finish mixing the ingredients
4. Teacher will direct them as to how to put the dough on the baking sheets.
5. Teacher will take care of baking the different recipes according to the directions. This will be done after class and will be available for the next day's lesson. Make sure to keep track of which group is responsible for the items being baked.

**Evaluation/Assessment of Student's Competency**

- Observe students as they work together in each group.
- Students do self-evaluation as to how well they followed directions in recipe.

**Closure**

The instructor will debrief the students and discuss the importance of following directions exactly. The instructor will allow for questions and answers.

**Section Three: Math  
ALT 3: Bon Appetite!****Summary**

Students will write about why it is important to follow directions exactly.  
Students will sample the finished results of the baked goods from the previous lesson.

**Competencies**

- Students will apply effective writing strategies.

**Time**

Approximately 20-30 minutes

**Materials**

- Paper
- Pencil/pen.
- Rubric

**Instructions**

1. Students will be directed to write a half-page report on “Why It Is Important To Follow Directions Exactly”.
2. Before beginning their writing assignment, students are to brainstorm some ideas on the back of their paper.
3. Go over rubric which will be used for writing assignment. Remind students to include details in their writing.
4. While students are writing, the teacher can get the baked goods out for them to sample. Keep the baked items separate as far as which group did what. This can be a lead in activity for comparing/contrasting. Note: It will take more baking time and more cookie sheets/trays for this activity.

**Evaluation/Assessment of Student’s Competency**

- Collect writing assignment.
- Check to see that directions were followed regarding brainstorming – give credit
- Use rubric to evaluate their writing assignment.

**Closure**

This activity will show the teacher that the students have a good idea of why it is important to follow directions exactly. Bon Appetite!

## **Culminating Activity**

### **Assembling a Sauder Bookshelf Unit**

**Summary**

Students will construct a Sauder Bookshelf unit, and demonstrate the proper use of following directions.

**Competencies**

- The students will read, construct, and use directions included in the Sauder Bookshelf unit.

**Time**

The Sauder Bookshelf will take approximately ninety minutes to complete.

**Materials**

- Purchase one Sauder Bookshelf unit.
- Directions for assembly of unit.
- Screw driver
- Soft mallet
- Open area to assemble shelf unit.

**Instructions**

1. Use assembly directions included with the bookshelf unit.
2. Divide students into (5) assembly groups.
3. Teacher(s) need to oversee the assembly of the unit.

**Evaluation/Assessment of Student's Competency**

- The teacher will observe the students as they are assembling the shelf. A rubric will be used during the observation process.
- After unit is assembled, the students will explain in writing what they observed during the process of assembling the unit. A list of criteria to be included in the writing lesson will be given to the students.
- The evaluation of the completed book shelf unit.

**Closure**

The completed shelf unit will be raffled off in a building- wide raffle. Money will be collected and receipts will be written for each raffle ticket sold. This will reimburse the cost of the shelf unit.