CASE

Activity 3.1.1 Step-by-Step

Purpose

Have you ever worked all of the way through a set of instructions only to find a detail that forces you to go back and undo all of the work? Just as reading the instructions for a project before beginning work is important, so is carefully planning the steps in a problem-solving process.

In your solution proposal, you drafted procedures for your project. How clear and concise are your procedures? What needs to be clarified?

Materials

Per student:

- *Activity 3.1.1 Scenario Card*
- Assorted materials according to scenario card
- Computer with Internet access and word processing software
- *Agriscience Notebook*
- *Laboratory Notebook*
- Pencil

Procedure

You will write step-by-step instructions for constructing a basic item or completing a basic skill. Then you will exchange directions with your partner and attempt to follow their procedure.

Part One – Writing Instructions

1. Obtain a scenario card from your teacher.
2. Read the article, "How to write instructions," from **http://www.techscribe.co.uk/ta/how-to-write-instructions.htm**.
3. Brainstorm a list of materials you will need in order to complete the task on your project card.
4. Gather the materials necessary for your task as directed by your teacher.
5. Complete the task one time to review the skill or technique. If you are unfamiliar with the process, you may need to research it online.
6. Take a picture or draw a sketch of the completed task.
7. Make a detailed list of the materials you used in your *Laboratory Notebook*.
8. Write a set of detailed, numbered steps that another person can follow to replicate your task. Assume the reader has never completed the task before. Type your instructions using word processing software.
9. Review and proofread your instructions for clarity and detail.
10. Complete the task by only following the instructions you have written. Revise as needed.

Part Two – Reading Instructions

1. Exchange procedures with your partner.
2. Independently attempt the instructions exactly as written.
3. Do not ask questions of or give advice to your partner.
4. Compare your product to the product made by your partner in Part One.
    - What differences do you see? Why do you think this is so?

    - How could your partner improve the instructions to ensure better results?

5. Provide feedback to your partner.
6. Adjust your instructions according to the feedback you received.

Part Three – Planning Your Project

1. With your partner, review the draft of your step-by-step procedures from your Solution Proposal.
2. In your electronic copy, revise the materials and procedures to improve clarity, grammar, and repeatability.

Conclusion

1. How do diagrams and illustrations assist a reader in understanding instructions?
    a. It helps them determine they are following the directions correctly.
2. Why are step-by-step instructions critical in the problem-solving process?
    a. To make sure no step is missed which could potentially effect data and results.
3. What is the most difficult part of writing step-by-step instructions?
    a. Making sure you do not leave any direction out or assume someone will do something.

Directions for making a Paper Airplane

1. Obtain 5 pieces of 8.5”X11” sheets of paper.
2. Take one piece of paper and lay the others to the side.
3. Fold the paper in half hot dog bun style or long ways.

4. Take the top front corner of one flap and fold it down so the edge is even with the bottom of that side.
5. Flip the paper over and repeat step 4 on the same end as the fold above.
6. On the same side at the same end of the fold above, take the folded edge and fold it down to meet the bottom edge of the side.
7. Flip the paper over and repeat step 6, on the same side as the previous fold.
8. Push both flaps created up until they are flat so your plane will fly, holding the inside flap down.
9. Repeat steps 2 through 8 to make four more planes.